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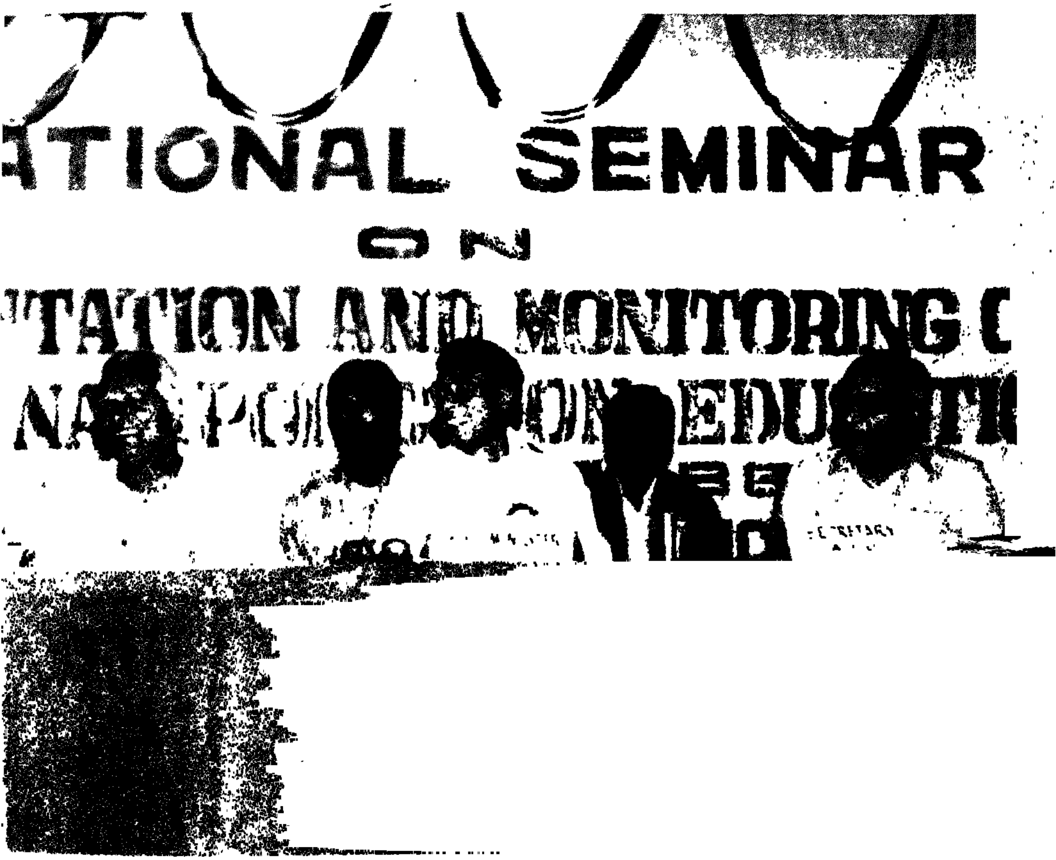

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Picture shows (from L to R) Prof. K.J. Mahale, Vice-Chancellor, Manipur University, Shri R.K. Joychander Singh, Chief Minister of Manipur and Prof. S.K. Agrawala, Secretary, AIU.

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Editor:
SUTINDER SINGH

International Co-operation of Universities In Research*

L. S Srinath**

The word "Research" has been defined in a very broad sense by Sri John Kingman to cover the whole activity of acquisition of knowledge, refinement and codification of knowledge and advancement of knowledge. It is also stated that this knowledge is to be transmitted in a number of ways for the benefit of the community. It is in the context of these that international cooperation of universities in research is to be analysed. I will be touching upon collaborative research programmes only and the remarks are based upon my personal experience and the cases cited are related to my present institution

Cooperation, both national and international, in all those activities that are beneficial to mankind is highly desirable Many national and international organizations exist to promote such endeavours not only in general activities, but also in research activities These organizations have been functioning for many years with good service records While these world organizations are primarily promoting and managing agencies, the real active research work gets done, by and large, at the level of individuals and groups of individuals While dissemination of knowledge is taking place in a variety of modes, real cooperation in active research is beset with many difficulties Let me cite an example. I will be focussing my attention and emphasising on collaborative research programmes

The Indian Institute of Technology (IIT), Madras, was established about twenty six years ago, as a joint venture between the Government of India and the Government of the Federal Republic of Germany. During the initial stages, the contributions from West Germany were directed towards establishing academic departments, providing necessary sophisticated equipment, sending experts for long periods of time, and to a limited extent guiding the academic programmes As the Institute started growing, the aid mainly assumed the form of providing grants for epuipment, offering limited training facilities to faculty and staff, and also making it possible for a limited number of experts to visit IIT-Madras for short durations To-day, IIT-Madras is one of the premier academic institutions in the country with good international reputation. During the last eight years, IIT-Madras is associating itself with a few a selected German Universities in a large number of Joint Research Programmes Each joint research programme involves two investigators—one from IIT-Madras and the other from one of the universities in Germany. A problem of common interest is identified, on which investigations get carried out at both places The results of these investigations are shared for mutual benefit. The project provides opportunities for brief visits of the investigators concerned to each other's laboratories. One would think that such a programme would be an ideal example of international cooperation or collaboration in research. But, a detailed examination reveals that the results of these joint research programmes are not all that exciting as one would have hoped or liked to see. It is in this background that I would like to make the following remarks.

**Paper presented at the 14th Quinquennial Commonwealth Universities Congress, 7-12 February, 1988.*

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Research, to me, is a highly personalised or individualistic activity. For persons working in academic institutions, success in research means same kind of ego satisfaction, recognition through publications in referred journals, through presentation of research findings in national and international conferences, etc. Career advancement, future opportunities in administrative cadres, etc., are also involved.

In the Universities, one of the common methods of getting research activities done is through research students who have registered themselves for some degree programmes. This factor imposes some serious constraints on the types of problems chosen. In order that one research worker may collaborate with another, it is necessary that a need should exist for active and voluntary collaboration. Some of the needs are obvious. These are :

Common problems or areas of investigation;
Desire to share result for mutual benefit;
Optimum utilisation of time and effort without much duplication;
Optimum utilisation of resources at one's disposal; etc.

Unfortunately, research as a highly personalised or individualistic activity with ego satisfaction, cannot easily accommodate these requirements. This is particularly so in the field of science and technology. Of course, in those areas of research work which involve national security, product or market competition, etc., free and active collaborations at international levels are not at all possible Such topics are not being discussed in this presentation.

In the example cited, i.e., Joint Indo-German Research, though the problems that were identified for joint investigations were of common interest, the nature of these problems did not lend themselves to much exciting results. Consequently, over a period of time, the interest in these gradually waned. In addition to these, as the research work involved students who were anxious about their research degrees, the nature of problems got changed to meet institutional and other degree requirements. An added complication was, the research investigators in both universities became engaged more and more in those problems which were funded through their own several national funding agencies. Consequently, there was no common pace of progress in the areas that were initially identified. Very few publications based on the joint research activities have appeared. However, the research investigators have been actively engaged in various other research problems. Of course, there were a few notable exceptions. But, what we thought was an ideal set up did not function. Another interesting aspect was the following. At the initial stages, there were considerable interests for the professors from the German Universities to come and spend considerably long periods of time in India. Over the years, this interest waned and the same professors started travelling to China and a few other South Asian countries. India, as a country of tourist and other interests got replaced by China as a new venture place. An analysis of those research problems which could be considered as reasonably successful for cooperation belonged to either humanities and social sciences or those areas dealing with agricultural sciences, low cost housing, pest control, etc. There were no problems which one would classify as belonging to hi-tech or to frontiers of science.

Having made these statements, let me start once again from the beginning. First, about the need.

We all agree that there definitely exists a need for international cooperation in research; particularly when research deals with knowledge; I mean knowledge in the true sense, when the knowledge is for the betterment of mankind and the world the mankind lives in. But, we all know, that this is as unrealistic a notion as the new economic order In reality, there are severe constraints and restrictions for international cooperation in research We can appreciate these constraints when we realise how research work gets done in the Universities. In these activities, either individuals or small groups of individuals are involved. Further, by and large, most of the research activities are not de novo activities. This is revealed by the way the research papers appear in journals. Each paper is an extension of earlier ones, as given in the references cited; and the current papers give rise to a new set of papers in which the current papers appear in their cited references. The reputation of a paper depends on the number of times it gets cited and the number of new papers it gives rise to. Dissemination of knowledge and generation of new papers through such publications is one of the commonest methods in the international scene Now, for two individual research workers from two different countries to come to an agreement to carry out joint or collaborative investigations, several conditions have to be satisfied.

There should exist a common desire for collaboration.

The problem chosen should be broad enough, so that the results of the two investigations are complementary or reinforcing and not merely duplication.

There should be no communication barrier, either in the language or in sharing fully the results of the investigations

The level of competence of the two investigators must be comparable

The resources available, financial as well as facilities, should be adequate in both the countries

Exchange of information should be fairly frequent

The efforts of each investigator should be capable of being assessed independently

The results of investigation should provide opportunities for the ego satisfaction and recognition of both partners It should at the same time provide opportunities for their individual growth and career opportunities in their respective institutions

The problems chosen should not be in conflict with their respective national security or other protective national interests

One can certainly think of a few more constraints of the above types The solution space, which meets all the previously mentioned constraints, is naturally extremely small The categories of problems on which international cooperation is possible will therefore be very limited Problems in the areas of hi-tech are definitely out of the picture Problems dealing with national security and defence are also out Under these circumstances, what kinds of problems lend themselves either for co-operative research or for sharing of information ?

Problems in the area of humanities and social sciences are possible Agriculture, animal husbandry health family planning are possible

Low cost housing, appropriate technology developments, certain types of alternative sources of energy like Windmill, Biogas, Wave energy, epidemic disease control are also possible areas

Fundamental research investigations whose results are not immediately known or cannot be visualised yet are also possible

One can enumerate a list of such problems or problem areas on which international cooperation and collaboration is possible But one common characteristic of a large majority of such problems is that the interest in their solutions will be one sided For example, in the case of low cost housing or low cost construction materials, more interest will be shown from the developing countries So is, in the case of appropriate technologies, family planning, etc This raises an interesting question, i e, whether cooperation is not possible among the universities in developing countries themselves since they apparently share common problems Unfortunately the number of such ventures are rather limited This may be due to large variations in the quality and standards among the research investigators capability of resource mobilisation, and a few other incompatible and disparate factors that exist among the developing countries Further, resources, particularly financial resources being a constraining factor among the developing countries, the potentiality for collaboration does not appear to be high An intesting paradox is the following Let me state it without bringing in too many complexities

I started with the premise that, for cooperation and collaboration in research to take place, there should exist a need or a desire among the research *workers for such collaboration If such a desire were* to be mainly towards knowledge sharing and knowledge dissemination, and totally directed towards the betterment of mankind it is obvious that there should be no hesitation for cooperation Further, if one were to identify a class of problems that is common to a group of countries then it is advantageous if these countries could share the knowledge among themselves for their mutual benefit Unfortunately, this kind of cooperation does not take place naturally, unless deliberate attempts are made to promote them Even in these cases, very few success stories exist The so called dedicated or committed research workers belonging to this category are very small in number The so called active research worker wants to shine by himself He desires recognition So, he focusses his attention towards the activities of the world outside his own country This is one of the reasons for the frequent statements made that many of the research activities carried out in developing countries are irrelevant to their needs Very few instances exist where a worker from India or Pakistan desires recognition in Sri Lanka, or a research worker from Sri Lanka desires recognition in West Indies, or a research worker from West Indies seeks recognition in one of the African countries The attention, by and large, is focussed towards advanced or developed countries.

Under these circumstances, what kinds of international cooperation in research can one think of ? If by cooperation in research we merely restrict ourselves to dissemination and sharing of knowledge, then one can say that this has been going on fairly successfully in several modes, particularly when this knowledge pertains to unclassified categories. Improvements are possible, but these will bring only marginal changes. To me, what is important is active collaboration in research. Because, in this process,

problems of mutual interest are identified;
experts are identified;
efforts are made to provide enough resources and facilities based on the project requirements;
there is some sort of time constraint;
efforts and results are complementary;

and more than anything else, it brings a sense of participation and commitment.

While universities are the real sources of wealth and reservoir of intellectual power, at the same time, the elements of these systems are so individualistic that it is difficult to bring a degree of coherence among the elements for effective cooperation. Hence, a deliberate attempt should be made to bring these elements together I would like to cite two proposals which are under our consideration, wherein the graduate students play the role of bridging elements.

The first one concerns joint Ph.D guidance programme between IIT-Madras and a few selected universities in Germany. Under this programme, a research student has two guides, one from IIT Madras and the other from a German University. A common research topic is identified and the student carries out the investigation initially in one of the institutions. A year later, he moves to the other institution and spends about a year under the supervision of the joint guide. The degree awarded comes from the institution to which the principal guide belongs The important point to appreciate is that there is a joint responsibility between the two guides coming from two different institutions, with time constraint built in.

An interesting and at the same time a paradoxical thing that makes this kind of joint collaborative project successful at international level is the following. In India, just like in many developing countries, the industry-funded research is fairly small. Most of the research funds come from the Government and Government agencies. In recent years, the funds available for research are substantial. Consequently, not only have the research topics tended towards basic research, but also the sources of these problems are external to the country. Hence, it has always been possible to find problems of common interest, but not of much relevance to the needs of the country.

The second proposal deals with a recent offer that has come from one of the universities in Canada This university wants a selected number of students who have registered themselves for a degree, to undergo all the course requirements at IIT-Madras and then go to Canada to complete the dissertation requirements. The research students obtain the degrees awarded by the particular Canadian University. While this scheme is quite attractive from the students' point of view, this reduces IIT-Madras to merely a teaching institution. This scheme is still under discussion for possible modification.

The third scheme that we plan to initiate soon involves industry as the bridging element. We recently acquired a mainframe computer from the Siemens Company in Germany. In this process, we have come to an understanding that the computer softwares that Siemens sells to various industries and other establishments will be developed jointly by IIT-Madras, the University of Aachen and the University of Kaiserslautern. In this, the Siemens Computer Corporation is the bridging element between these academic institutions. This particular scheme with suitable modifications can be copied advantageously by the Universities in Commonwealth Countries and multinational industrial set ups with their bases in these countries. International consultancy, joint product developments, developments of new technologies on a cooperative basis, are some of the possibilities.

In this brief paper on International Cooperation in Research, I have laid greater emphasis on active collaboration in research. Solutions are not simple, but I have tried to indicate a few schemes that have the potentialities of success, based on cases related to my institution. □

* * *

Researches In Educational Finance

Problems & Perspectives

J L Azad*

This paper seeks to examine the present status of researches in educational finance in India with particular reference to its quantitative dimensions An attempt has also been made to delineate the broad strategies of research development in this field The discussion has been divided into two parts

In **Part I**, an attempt has been made to subject the present status of research in educational finance to a critical review. Besides making a quantitative analysis of the research effort in this area in the post-independence period, a critical review has been made of the nature and type of researches conducted in this field No attempt has, however, been made to assess the quality of researches completed so far

In **Part II**, the research needs in the area of educational finance have been identified Effort has also been made to specify the broad contours of the proposed researches in this field.

PART I

(a) A Quantitative Analysis

Educational research in Indian universities, besides being small in quantity and 'mediocre or poor in quality'[1] is by and large traditional and stereotyped A careful look at the researches coming out of our university institutions would reveal the preponderance of researches in conventional areas like educational philosophy, educational psychology, educational measurement, etc While it is not intended to minimise the importance of these areas, it is disheartening to note that preciouse little attention has been bestowed to the newly emerging areas of research like economics of education, including educational finance, population education, ecology and education, and a host of related fields of research

Although finance is a very crucial input in the development of education all over the world and its real or imaginary inadequacy has been debated at the various world forums, very few researches have been carried out to study the variegated problems of educational finance The inadequacy of research effort in this field can be realised by the fact that, during the period 1956-74, out of over two thousand studies on economics of education (including articles, papers in journals) listed by Blaug (1978)[2], only less than 200 were concerned with problems of educational finance and costing Out of these the developing countries of Asia, Africa and Latin America accounted for only 35 studies By no means a significant achievement

In India, although the first recorded study on educational finance was made about 100 years ago, the subject has not attracted adequate attention of researchers either at the doctoral or post doctoral stages. All through the British period except for the various commission and committees appointed by the British rulers from time to time which studied the problems of educational finance from a purely functional point of view, there had been no attempt to study the different aspects of educational finance. Even after the attainment of independence the subject has not attracted sufficient attention of the research scholars, so much so that the first ever study on educational finance was completed 12 yeas after the British Raj bowed out of this country

The over all position about researches in educational finance has been far from encouraging even in the most recent period This is evident from the fact that during the years 1981 and 1982 out of 148 theses accepted by the Indian Universities[3] for the award of the degree of Ph D in Education, only 7 were relating to the area of economics of education, out of this only 2 were concerning the problems of educational finance Under Economics out of 157 doctoral theses accepted by the universities, 7 related to economics of education and only one related to educational finance Further under Sociology and Social Anthropology, out of 69 theses accepted by the universities, 3 related to economics of education and none related to educational finance

The inadequacy of research in educational finance is evident from the following table, which gives the

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break-up of 17 doctoral theses under the subject of Economics of Education accepted by the universities during 1981-82 under the departments of Education, Economics, Sociology and Social Anthropology :

Subject Areas	Number of Doctoral theses accepted
Educational Finance	3
Educational Planning	2
Economic aspects of Education	4
Education and Employment	1
Socio-economic Status and Education	5
Others	2
Total	17

(b) Thematic Review

Researches in financing and costing of education in India could be broadly divided into the following two categories :

(i) Researches/studies/surveys commissioned by the government and its specialised agencies. These studies are mainly problem specific.

(ii) Researches undertaken by individual researchers. These researches are of theoretical as well as applied character.

Under category (i), mention may be made of the pioneering attempt at working out, among other things, the costs of educational reconstruction in the post-Second World War period by a Committee of the Central Advisory Board of Education (known as the Sargent Committee)[4]. Soon after the British hegemony ended, the Government of India appointed a high-powered Commission of University Education[5] under the Chairmanship of the Late Dr. Sarvpalli Radhakrishnan. The Commission examined, in a voluminous but extremely readable report, the problems of university finances as a part of the overall problems of university development. This was followed by the appointment of a Committee,[6] under late Shri B.G Kher, to report on the methods of financing education including higher education in India. Some of the state governments also appointed committees to study the system of education in their respective areas including the problems of finance. The Education Commission (1964-66) also brought out a number of studies including those pertaining to financing of educational programmes.

The study group on the Resource Mobilisation for Education set up by the Ministry of Education in its report (1970)[7] reviewed the existing measures adopted by the state governments for raising resources for education and suggested additional measures for raising resources and using those resources and other facilities optimally.

The studies[8] sponsored by the Indian Council of Social Science Research related to micro-analyses of finances of selected universities. The six universities that have been studied are : Calcutta (Mukherjee, 1974), Kerala (Mathew, 1974), Patna (Jha, 1974), Rajasthan (Nigam, 1974), Karnataka (Nanjundappa, 1976), and Bombay (Panchamukhi, 1977). Some more studies are still under way. These studies have major focus on sources of finances and their relative importance, the adequacy or otherwise of the university revenues; expenditures under different heads and difficulties faced by the universities due to financial inadequacy.

While the major themes of these studies are almost similar, the individual scholars have varied their emphasis on certain essential details For example, Panchamukhi[9] examined question like whether individual institutions are making enough efforts to mobilise resources and whether they are spending the funds efficiently and economically He also worked out the quantum of subsidy available to students belonging to various disciplines in the university of Bombay. Nanjundappa[10] discussed the structure of university finances in relation to cost and performance. He examined the questions of costs of higher education and fees and pleaded for bringing about a closer alignment between the two.

The Association of Indian Universities has brought out two studies about resources for education and costs of university education. The first study[11] deals with the patterns of resource allocation and changes in it over a period of time. It also examines whether such allocations have any bearing on economic indicators. In the second study,[12] the structure and unit costs of different types of universities have been examined. One interesting conclusion of the study is that the administrative and supporting services claim a larger proportion on the operating budgets of the universities than the teaching costs.

The Institute of Applied Manpower Research has completed three studies (1964, 1972 and 1975)[13] about the pattern of expenditure relating to the Indian Institutes of Technology. In another study[14] (1979), the pattern of expenditure in engineering colleges and polytechnics has been examined The study discovered substantial variations in the pattern of per student expenditure among the responding colleges and polytechnics

The Indian Council of Social Science Research sponsored a comprehensive study in 1978 about the financing of social science research in India The intention of the study was to quantify the financial inputs for social science research to identify the sources of finance and to find out the extent of collaboration and coordination among the various bodies financing and/or sponsoring research in social sciences The study has brought out very interesting facts about research in social sciences.[15]

Under category (ii) mention may be made of Misra's studies (1959 1962 1967)[16] on educational finances in India which give many historical details about the system of educational finance that existed in ancient India during the British period and the early years of post independence period Nair and Pillai (1962)[17] focussed their attention on the financing of education in Kerala Naik and Lawler (1965)[18] studied the problems of financing of elementary education Kamat Azad and Panchmukhi (1978)[19] discuss some aspects of financing of higher education in the post independence period They have highlighted the financial crisis in higher education

Problems of financing of higher education in less developed countries were studied by Rizvi (1960) [0] The study by the present author about the financing of higher education in independent India (1975) [1] sought to analyse the behaviour of high education finance—aggregative as well as institutional -during the post-independence period He also discussed certain basic policy issues pertaining to financing of higher education in the country. In his second study' (1975) a macro analysis was made of patterns, procedures and policies of government grants to institutions of higher education In another study [3], the author examined the problems of financing of higher education and research at an all India level

There are very few studies on costs of various educational programmes At the international level, Coombs and Hallak (1972)[21] carried out a comparative study on management of educational costs with particular emphasis on questions like the behaviour of educational costs in different countries and the measures of reducing costs Similar studies were carried out under the auspices of OECD (1972) [5] In India, Lakdawala and Shah (1978)[6] *carried out a study* on optimum utilisation of educational expenditure in Gujarat State *The study* aimed at exploring the possibilities of bringing about economies in educational expenditure as also at ensuring its optimum utilisation

The state grant in-aid system which has grown in size and complexity since 1854 when it was introduced in the country by the British rulers of India has also received inadequate attention In Independent India, this has been the main procedure of financing at all stages Among the very few studies on the subject mention may be made of the study by Naik (1965),[27] who made an analysis of rules relating to grant in aid to colleges of arts and science and secondary schools Misra [8] also made an analysis of the grant in aid system in vogue in the various states in India As already stated, the problem of grant in-aid in higher education has also been studied by the present author (1975) with special reference to patterns procedures and policies of state grants This was however a macro type of analysis

The problem of returns from education has been studied by quite a few researchers [9] The findings of these researches are however, not strictly comparable because each one of these studies is based on different assumptions and procedures of computation One interesting finding of these studies is that returns from primary education are higher than those from college education and hence there is a case for diversion of resources from college education to lower levels of education [4]

Summing Up

The preceding analysis of the research studies in educational finance undertaken in India brings to focus the following points

(i) The total quantum of research effort is rather inadequate for a country of India's dimensions To bring about this sordid state of affairs the universities have made no mean contribution If about 180 universities, (including institutions deemed to be universities and institution of national importance) were able to produce only three doctorates on the subject of educational finance during a period of about two years, the inadequacy of research effort in this important field of study can be very well appreciated. Even if we take into account the researches sponsored by the specialised agencies like the Indian Council of Social Science Research, University Grants Commission, etc, the total research output is rather disappointing.

(ii) The inadequacy of research effort is further compounded by the almost absence of researches in certain essential areas of educational finance For example, studies on unit costs, educational cost indices, private costs and social costs have been almost conspicuous by their absence. The system of state grants to various types of institutions has also received inadequate attention This indicates somewhat lack of planning in the formulation of research proposals in the university institutions

(iii) It has also been observed that the bulk of the studies are at the macro level Except for a few studies of university finances sponsored by the Indian Council of Social Science Research, most of the studies relate to the all India level. For obvious reasons, it is difficult to apply the findings of these studies to micro level situations

(iv) It has also been found that quite a few of these studies are historical and descriptive in character Without denying the need for such studies, it is necessary that studies of a more analytical nature should be taken up

(v) In the studies of educational finance, the analysis has been primarily limited to developmental expenditure i e the outlays included in the successive five year plans The non-plan expenditures, which constitute about 80 to 90% of the total educational expenditures have been left outside the purview of most of the studies. Obviously, this analysis of the educational expenditures only tells a partial story and hence has a limited utility

PART II

Research Needs in the Area of Educational Finances

Before making suggestions about the research needs in the area of educational finance, it would be pertinent to delineate, broadly, the general themes of such studies and to outline basic questions of policy that such investigations might seek to examine.

Research Themes

Studies in educational finance should be directed towards examining questions like the quantum of total resources available for education and their intersectoral allocations; patterns and procedures of government grants, identification and mobilisation of resources for education with reference to the national economy, costs of, and returns from, education, internal and external efficiency of the educational system, etc, specific problems of financing university education, secondary education and elementary education could also be examined.

Suggested Studies

Keeping in view, the broad questions of policy indicated above and the type of researches conducted in India so far, an attempt is made to suggest some of the important areas of research relating to educational finance. The recommended studies are, however illustrative in character and are in no way exhaustive Further, no attempt has been made to draw up a list of research priorities, because these will emerge in relation to the needs of the particular areas institutions for which these studies are undertaken Further, because of the inter-connected nature of these concepts, some overlap is unavoidable

1 Growth of Public Expenditure on Education

The study could be undertaken in an historical perspective The allocations for education both for maintenance and development may be studied in relation to the growth of national income, demographic expansion, the priority accorded to education in relation to the total plan outlays the growth of expenditure in relation to the expansion in enrolment at various stages etc Studies under this head could be multi dimensional in that the analyses could be aggregative i e for India as a whole or disaggregative i e state-wise, region wise, etc. Within education it could be sector wise i e for elementary, secondary and higher education, etc.

Another problem that could be studied in relation to public expenditure on education is the mechanism of allotment of resources for education An important aspect to be studied would be to what extent political, social and economic factors influence the decision-making authorities.

2. Budgetary Allocations

Education has been the most vulnerable sector so far as budget allocations are concerned. The impact of the cuts made at the central and state levels on educational growth and efficiency needs to be studied.

It has also been found that even after sectoral allocations have been determined under the five year plans, there are large and frequent diversions from one sector to the other. The worst 'sufferer' in this regard is the elementary education sector. The causation of these monetary diversions and their impact on the quantitative and qualitative development of this sector needs to be studied.

3. Resources for Education

The changing pattern of educational resources like government—central and states, fees, private benefactions, etc , could be studied The element of subsidy at different levels of education could be worked out. The measures for accelerating private resources for education could also be identified Studies could be undertaken for mobilising private resources for education, that is, private donations and student fees The manner in which industrial and commercial houses could contribute to education may also be subjected to an analytical review

4 Non-Monetary Inputs

Given the scarcity of resources for education, accent should be laid on studying the optimum utilisation of academic and other physical facilities. This would necessitate studying school curriculum, working hours, school buildings equipment utilisation, faculty arrangement in order to ensure better returns from the existing facilities etc. Participatory management techniques involving the teachers and the students alike, development of a relevant academic ethos, opportunities for learning by doing and appropriate consideration to the problems of first generation learners are some of the other dimensions of the non-monetary inputs, which could be subjected to thorough investigation.

5. Costs of Education

The costs of education lend themselves to a three dimensional analysis

(a) Social Costs

Since education has a long gestation period, its returns are available only after the lapse of a defined period. Further, the society has a stake in education because it also gains through the academic and professional capabilities of the educated personnel. So education is an investment activity, which benefits the society as much, if not more, as it benefits the individual. The problems to be studied are : how much the society spends on education and how much it benefits from the enhanced productivity of the educated persons The social costs and returns could be studied separately for various stages of education

(b) Institutional Costs

It may be worthwhile making in-depth studies of costs pertaining to the establishment and maintenance of institutions of verious types located in different regions. For example, the expenditure mix of elementary schools, secondary schools : public, private, recognised and aided, un-aided etc , may be studied.

The incomes and expenditures of various types of universities—central, states, institutions deemed to be universities, institutions of national importance etc , could be subjected to a critical review The incidence and quantum of recurring deficits of the university institutions may also be analysed The manner in which the university institutions manage to survive in spite of these deficits would also lend itself to interesting investigations Similar studies could be extended to colleges categorised from different stand points like (a) Management Government, private, aided, unaided (b) Courses offered Colleges of general education, professional education, special education, and (c) Location rural, urban or semi-urban areas

(c) Private Costs

The private costs of education have to be studied in a systematic way. One of the reasons for dropouts at the different stages of education is the apparent inability of the parents to finance the education of their wards The magnitude of the opportunity costs to various groups of student population have also to be studied. This is important not only for being better informed about the burden on the students and their parents but also from the point of view of determining the policies of government financing of the educational system, including the policy about the award of freeships, scholarships, fellowships, etc.

6. Educational Cost Indices

No significant attempt has been made to work out educational cost indices Accord ng to common knowledge, the educational expenditure by government has increased manifold. From about Rs. 900 million in 1950-51, it is in the realm of about Rs. 80,000 million. How much of this has been rendered ineffective by the ever increasing costs of the educational apparatus needs to be studied These studies could be done separately for different stages of education because of the variations in the expenditure 'mix' at different stages.

7. Relationship Between Investment in Education and Economic Growth

This can be done statewise/areawise. The first step would to calculate indices of enrolment by giving appropriate weightages to different stages of education per 100 of population and the state per capita income over the years. Correlation coefficients could be worked out between enrolment at different stages of education end economic growth for different years This would, however, necessitate neutralising the effect of other factors like health, recreation, housing etc., on economic development.

8 Cost-Benefit Analyses

This is a related problem. The studies under this head would involve analysing the contribution that education makes to the individual and social development in terms of the financial inputs. The intention would be to maximise the individual and social returns from educational investment.

9. Socio-Economic Studies

Very few studies have been made about the socio-economic background of the students of different categories in educational institutions. The parental income, the size of the family and the number of dependents, particularly school and college going children, the per capita income in the family, the living conditions of students and a host of similar problems need to be studied systematically in order to have a clear idea about the financial problems that the students belonging to different socio-economic and cultural groups face.

10. Utilisation of Educational Infrastructure

Studies relating to the extent of utilisation of the educational facilities need to be undertaken. It has been found that the infrastucture in education is not optimally utilised. The result is that while at one place there is a surfeit of educational facilities, most of which are not adequantely utilised, at some other places in the vicinity, even the minimum facilities are not available. These studies, done on a regional basis, will throw much light on the utilisation of the existing facilities and will help in determining the extent to which the policies of educational expansion can be modified.

11. Systems of Assistance from the Goverament

This is another important area of investigation under which a number of studies could be undertaken The patterns and procedures of state assistance for the maintenance and development of institutions could be analysed in an historical perspective. The studies could also be directed towards focussing the bureaucratic idiocyncracies in the sanctioning and release of state grants.

The following questions could be examined :

(i) how far the State Grants have a policy orientation about educational development;
(ii) how far the state (or central) grant-in-aid rules are unambiguous or liable to multiple interpretations;
(iii) how far the state grants are adequate to meet the rising needs of educational institutions, and
(iv) how far the state grants encourage innovations by the educational institutions, etc.

Conclusion

The discussion may be brought to a close by reiterating that research effort in educational finance is inadequate quantitatively, lacks planned effort and is far from comprehensive. There is a vast expanse of virgin lands which have escaped the attention of researchers. The university departments of education have, so far, not been able to make any worthwhile dent in this important field of investigation. It is therefore, necessary that they should shed their indifference, which is born mainly out of traditionalism and in some cases, lack of capability to adapt themselves to the fast changing needs of research. The newly emerging areas of research offer a challenge to the academics and intellectuals of our country and it is hoped that they will not be found wanting in meeting the challenge more than half way.

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Convocation

Be Proud to Be a Woman

"A woman should be proud to be a woman, not apologetic It is time that they made society realise the fact that a woman is not a piece of transferable property among men by her father, husband or sons. They should realise that it is possible for women to survive as individuals and can lead their lives independently. Women need not lose their femininity in order to rise above their traditional subservient roles. An intelligent, capable woman can hold herself with dignity and courage in any situation", exhorted the noted journalist Shri Kuldip Nayar Shri Nayar was addressing the first Convocation of the Kanpur Vidyamandir Mahila Mahavidyalaya, Kanpur. Excerpts

It is heartening to see women doing well at studies and excelling themselves in various professions. Awareness of the importance of good education for girls in itself is a sign of positive social change. However, education does not merely mean being able to read and write or obtain degrees and diplomas. True education is much more than this. It exposes you to influences, enriches and refines sensibility. It also helps develop one's personality. An educated and professionally trained women has access to several careers; she is also likely to make a better wife and mother if she has chosen matrimony as her ultimate objective

Looking at a glance we see women generally associated with idea of enclosures. It is universally assumed that home is where a woman's heart should be. A man is generally associated with the idea of wider spaces outside home. A woman's escape into the space from the enclosure is often frowned upon. Her return to the enclosure is always approved of. It is an ironical situation.

Domesticity is neither bad nor undesirable in itself but when it becomes compulsive and when it prevents creativity of other kinds, especially in a talented person, then it is questionable Women who wish to break away from it should have the option open to them Now, the option is not going to be given to them on a silver platter They have to strive to obtain it and to hold on to it. An educated woman is the one who exercises her talents and capacities to control her circumstances rather than allow them to control her

Belonging to womanhood, you carry the burden of the great collective memory of centuries of subjugation plus the responsibility of freeing yourself and the others from it in a constructive way. The idea of a woman as a picture of sacrifice is no longer relevant. We admire those who are intelligent, practical levelheaded and creative. A woman need no longer think that she would find ultimate fulfilment in serving others. If service is the paradigm of femininity, she should let others serve her on an equal basis.

But all this cannot be made to order unless you work towards it. You have to achieve the status that puts you in that position through clear thinking, hard work and a spirit of independence. Of course your responsibility will increase manifold and it will be your job to see that you as well as other women are treated with respect. It would be possible when you are aware of your identity as a person and when you can consciously exploit the fullest potential of your personality. A sensitive woman protests against both idolatry and abuse of women and only her actions can bring hope to others.

What happened in your own city is a country's shame. Three girls of marriageable age committed suicide because they saw little prospect of marriage in a society where woman often goes to the highest bidder. Dowry has not lessened over the years; it has only increased and the ostentatiousness which has come to be attached to weddings—five-star receptions, etc,—has made the scene vulgar and terrifying. But the blame does not lie on women but on the society which has surrendered to the custom, despite legal sanctions against it.

A woman should be proud to be a woman, not apologetic. It is time that they made society realise the fact that a woman is not a piece of transferable property among men by her father, husband or sons. They should realise that it is possible for women to survive as individuals and can lead their lives independently. Women need not lose their femininity in order to rise above their traditional subservient roles. An intelligent, capable woman can hold herself with dignity and courage in any situation. This is the lesson to be drawn from the Kanpur happenings, not a pall of disappointment and fear that has been hanging over many homes.

The immediate need of the hour for women is freedom. It is not only from decadant, meaningless customs and superstitious believes but also from dependence and bondage of all kinds. There is a need to cultivate a rational approach towards life and towards the problems of survival in a world full of horrors—dowry deaths, sati, denial of secular justice to women, amniocentesis tests and female infanticide. It is necessary to make a lot of noise about social injustice based on gender. It is also essential to protest in an organised and consistent manner. But mere protests are not enough for justice is to be demanded, obtained and maintained.

In the name of "this is tradition" many evils are sanctified. A particular behaviour is expected and insisted upon. But tradition is not something frozen. It undergoes changes from generation to generation. In the Hindu mythology, it has happened again and again. In Shakutalam, Dushyanta married Shakuntala in Kanvar's hermitage. That was a gadharva marriage which does not require any rituals or ceremony. Will that marriage be accepted legal today even though tradition has it ?

Again, there are various versions of the Ramayana. Sita is submissive in one, assertive in another. In the Buddhist Jataka literature, Ram and Sita are described as brother and sister and they were exiled alongwith Lakshman.

There is nothing sacred about tradition. It is a convenient instrument used by the vested interests to keep the society in bondage. Child marriage, sati, non-marriage of widows—all customs are practised at the instance of men to keep women in subjugation.

During the Vedic period, woman was worshipped and the relics of those days indicate the respect in which they were held. Even now in Rajasthan, among the Rajputs, where sati is glorified, Mirabai lived in the 16th century and she did spend her life serving her husband, let alone giving up her life for him. Mira's songs openly proclaim her determination to undertake a spiritual quest, resisting the opposition of her husband and in-laws.

In one song, she addresses her husband thus : "Ranaji, you cannot stop me now/I love to be among the wise/I throw off the veil of modesty....../Take your necklaces and jewels/I tear and flick your finery/Mira wanders, a mad woman,/Her hair flies free". (Ranaji, Ab na rahoongi tori hatki).

She lived a highly unconventional life, breaking out of seclusion, travelling widely with a following of women, and singing and dancing in temples. In many songs she stresses her defiance of social opinion :

> Mira dances with bells *on* her feet.
> 'Mira is mad' people say
> 'Destroyer of family' kindred call me
>
> Mira dances with bells on her feet......(Pag ghungroo bandh......)

In one song she even states : "I will sing of Girdhar/I will not be a Sati......(Girdhar gasya Sati na hosya).

One hears a lot about women's liberation movements all over the world. A truly liberated woman does not run down or consider men inferior to her. She considers them equals with whom she can communicate on an equal footing. An ideal society calls for equal opportunities for both men and women. In our country there is need to do a lot towards this goal. A happy society is where (a) women enjoy financial independence and opportunities of work in their chosen spheres: (b) there is no fear of derision, humiliation and molestation just because they are women; (c) there is no need for separate queues and reserved seats for women; (d) mother's name is given equal importance to father's in legal/official papers; (e) women are *not included in* the *minorities* and weaker sections of society; and (f) women are considered persons and not commodities.

Cynicism or pessimism towards the prevalent conditions is not the right attitude. A beginning has already been made in the form of awareness of their rights among women in India. It is for young women like you to carry the task ahead.

"We seemed to be helpless in the grip of some all-powerful monster; our limbs were paralysed, our minds deadened. The dominant impulse in India was that of fear pervasive, oppressing, straling fear fearof the army, the police, the widespread secret service, fear of the official class; fear of laws to suppress and of prison." this is what Jawaharlal Nehru said, while describing India under British domination.

I am reminded of a novel "The House on the Embankment" which stirred wide attention in the Soviet Union. The theme was that passiveness paved off. The author, Yuri Trifonov, narrated the story of Glebov, the central figure, who by avoiding firm stands on important issues goes higher in the life and stays out of trouble.

"His gift was to be nobody", says an *acquaintance of Glebov.* "As I realised later, people who have the genius to be nobody go very far...... are always successful."

How true it is in today's world. If the lives of successful men and women were to be found *that most of them belonged to the* tribe which knew how to get along. They never came in others' way; they never walked out of step; they never made any thing an issue Their preference was to keep quiet and if at all they spoke, they were *seldom out of tune. Some would* criticise them for playing it safe but from any standard they were successful and climbed the ladder higher and higher

Indeed, success has become synonymous with passiveness If *you know how to get along, you* advance in life. If you donot accept any responsibility, if you do not take risks, if you just lie low, you read the maximum crop And people even come round to believe that you must be possessing some talent.

Take the civil servant. Those who take no decisions can make no mistakes. They may only push the file with their "dhobi mark" to use the bureaucrats, lingo, but they invariably go places. You may say that they lack initiative, but how does it bother them ? They get their annual increments and even out of turn promotions. What *else do they want from life?*

No doubt, all that they do is to discuss the pros and cons of a case, record a note which summarises both sides and leave the rest to their superiors. They know from their experience that it never pays *to express their opinion.* Why take in any risks in expressing an opinion or taking a decision if you can safely "pass the buck" ? It may mean slowing down the decision-making process or stalling some programmes which could have been expedited But that is not their concern if they can stay out of trouble. Why should they stick their neck out ?

Intellectuals are no better. Conformism has become the badge of their community. They rationalise every happening in their life. Independent thinking is only a make-believe behind which they indulge their *lives of security* and good living. The rule "I sing the song of him whose bread I eat" sums up their philosophy. They would do anything to retain all that they have—and their comforts. It is not that they do not appreciate the *value of sacrifice or suffering for* one's convictions but it is a precept which they want others to follow.

Whether they believe in anything at all is difficult to say. But they do give the impression of people who are interested in themselves *primarily. In the words of* a philosopher, "No doubt, when modesty was made a virtue, it was a very advantageous thing for the fools, for everybody is expected to speak of himself as if he were one".

They may talk of values—and they endlessly talk *of principles* and ideals—but it is the material rewards that they are after. But then their great gift, as Yuri Trifonov says in his novel, is to be nobody. Since this has paid them so far, why should they change ?□

Indian Council of Medical Research

RESEARCH CAREER DEVELOPMENT AWARDS

The Indian Council of Medical Research has instituted a limited number of 'RESEARCH CAREER DEVELOPMENT AWARDS" from the year 1988-89 to provide young talented Scientists Scholars with an opportunity to pursue their research interests in any institution in India, including the ICMR's own institutes The basic eligibility criteria are :

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(iv) Applicants engaged in private practice will not be considered for the award.

(v) The last date for receipt of completed applications has been extended to **31st July, 1988**

Those who have applied in response to the earlier advertisement need not apply again. It may, however, be noted that the minimum duration for the Research Career Development Award will be one year (and not three years as indicated in RCDA forms supplied earlier) All other terms and conditions will remain the same

Further details can be obtained from the Director General, Indian Council of Medical Research, (Division of Administration-III), Ansari Nagar, Post Box 4508, New Delhi-110029.

Imphal Seminar on Monitoring & Implementation of NEP

The Association of Indian Universities is organising a series of seminars in the various regions of the country to consider the monitoring and implementation of the National Education Policy (NEP) and its Programme of Action. Vice-Chancellors, Deans and Principals from Universities are participating in these seminars.

The first such seminar was organised at Delhi from 14th to 16th April, 1988. It was reported in the *University News, April 25 issue.*

The second seminar was organised at Imphal from 19th to 21st May, 1988. Twenty seven participants from 14 universities including 9 Vice-Chancellors participated. The themes discussed at the Seminar were : Making the University System Work; Improvement in Efficiency; Mobility of Teachers and Students; and Language, Development and Cultural Perspective. The Conference was inaugurated by the Hon'ble Chief Minister of Manipur, Shri R K. Joychander Singh. Prof. K J. Mahale, Vice-Chancellor, Manipur University presided. Prof. S.K. Agrawala, Secretary of the Association of Indian Universities introduced the themes of the Seminar to the participants. Dr. V. Natarajan, Director (Research) in the Association, introduced the Keynote speakers Prof. B. Chatterjee, Vice-Chancellor, Rabindra Bharati University, Prof. Ramaranjan Mukherji, ex-Vice-Chancellor, Burdwan and Rabindra Bharati Universities, Prof. S.P. Banerjee, Vice-Chancellor, Burdwan University and Shri G.B K. Hooja, ex-Vice-Chancellor, Gurukula Kangri Vishwavidyalaya and ex-Chairman, Manipur Public Service Commission.

The Chief Minister emphasised that every country develops its own system of education to express and promote its unique socio-cultural identity and also to meet the challenges of the time. India has been no exception to it. In order to achieve the desired objectives, the Education Policy of 1986 has suggested removal of disparities, reorganisation of education at different stages, technical and management education, reorienting the content and pedagogy of education, teachers' education and the management of education, as the key areas requiring maximum attention. He mentioned that in the State of Manipur, they have taken up the implementation of the policy in right earnest. The important features of such efforts were : rationalising the school education system; delinking pre-university classes from degree colleges; vocationalisation in selected higher secondary schools; setting up a secondary model in each district; introducing new syllabi in the school classes; supply of free exercise books to students studying from classes 1 to 8; free supply of uniforms to girl students belonging to SC and ST classes, etc.

The themes of the seminar were discussed in four separate groups and consensus arrived at on several points like :

1. (1) In the university system, the responsibility of all the functionaries should be clearly defined so that specific persons can be held responsible for specific lapses.
2. (2) With this objective, some specifically defined responsibilities for all the important university functionaries have been suggested. Similarly, minimum responsibilities of the teachers and students have also been spelled out as well as those of the Govt Departments and administrators.
3. (3) The seminar emphasised that in case the Govt. does not meet its minimum commitments, as procedurally determined, in respect of finances and infrastructure facilities, the college and university system just cannot function.
4. (4) Norms of teacher evaluation have also been suggested.
5. (5) Minimum student facilities relating to accommodation, sports, cultural and recreational activities, co-curricular and extra-curricular and extension activities, health facilities, etc. have been spelled out with due emphasis on student counselling.
6. (6) The basic components of the machinery for the removal of grievances of the teachers, students and employees have also been suggested
7. (7) Modalities for student participation for making the system work have also been suggested.

Specific recommendations have also been laid down with respect to the other themes relating to the 'mobility of teachers and students', 'Improvement in efficiency' in the university and college systems and', 'Language Development and Cultural Perspective'.

This is the second in the series of seminars in which senior academics participated for 3 days to deliberate on specific steps for implementation of the programme of action and *monitoring* the progress of the implementation of the National Education Policy. The deliberations were a great success when viewed in the light of consensus reached on several crucial issues. The reports of all these seminars shall eventually be considered by the Govt of India, Ministry of Human Resource Development, which is financing these seminars. ☐

Education for Women's Equality

Mother Teresa Women's University, Kodaikanal organised a Principals' Meet on Implementation of New Education Policy with special reference to education for women's equality on 28.5.1988 at the University's Research and Extension Centre at Madras. The Vice-Chancellor, Dr. J K. Pillai, presided

Dr. Mary Josephine Louis, Professor and Head of the Department of Education, Mother Teresa Women's University, welcomed the gathering and spelt out the objectives as identifying areas of Women's Studies that could be incorporated into the curriculum, areas of Research and Extension work, activities that would promote building up a positive image and inculcate critical thinking Dr J K Pillai in her presidential address emphasised the role of Education in the liberation of women from the subservient position occupied by them, with a few illustrations and appealed to Principals to stimulate teachers in their colleges towards substantial changes that ought to occur in higher education towards women's equality.

Mrs Sarojini Varadappan, President, All India Women's Conference, Madras and a member of the National Committee for Women's Development, appraised the group of the National efforts for the development of women She promised to carry the recommendations of the Principals' Meet to the National Meet and ensure their implementation.

The Principals' Meet resolved that :

- women dimensions be incorporated in different disciplines, first in autonomous Colleges and later to be taken up by the Boards of Studies of the various Universities;
- a Women's Cell be instituted in all Women's colleges with the assistance of the UGC and the Cell take up studies in women related topics and organise Seminars, Workshops on women's issues;
- discretion be given to Principals of Women's Colleges to take up activities related to Women's Development in their NSS Programmes;
- during the year 1988-'89, the Women's Colleges in Tamil Nadu to take up women's issues as their central theme of co-curricular activities ,
- self employment dimensions be included in various courses The modalities would include career information services, lectures by successful role-models from industries, government and other organisations;
- training courses be organised during summer holidays to make girls employable;
- women's Colleges should encourage physical education activities, and girls interested in sports activities should be given special encouragement and training.
- women's colleges to give special attention to the eradication of illiteracy among women, through the package programmes as formulated by the UGC guidelines—Adult Education Centres, Jana Siksha Nilayams, Non-Formal Education Centres;
- leadership training programmes be organised for girls with the help of Voluntary Organisations and Youth Welfare Departments;
- more girls be inspired and encouraged to sit for the competitive examinations; special training courses be offered with the help of the UGC;
- women teachers develop competence on par with men teachers and to this end, staff development programmes be organised by the colleges Women teachers should be encouraged to attend Seminars/Workshops organised by National Agencies like NIEPA, NCERT, UGC, ICSSR, etc.
- to enable women teachers to update their knowledge and skills, they should be given training in time-management, reducing durdgery in home management, innovations in child-rearing practices, in simplification of their task and in changing their food habits;
- to appeal to the Government to provide some percentage reservation for women in important decision-making bodies such as Planning Commission,

Dr. B Regina Papa, Registrar, Mother Teresa Women's University, who proposed a vote of thanks suggested forming a network of Women's Cells in all colleges to be monitored by Mother Teresa Women's University.

Syllabus Design & the Teachers' Role

A Workshop for the college teachers on Syllabus design and the teachers' role in converting the given syllabus into practical courses was organised by the Central Institute for English and Foreign Languages' Regional Centre, Shillong in collaboration with the Department of English, North-Eastern Hill University and the Directorate of Public Instruction, Government of Meghalaya.

The five-day workshop had before it the following tasks :

(i) Critically examining the proposals given in the Document : National Policy of Education, 1986, Programme of Action, Government of India, Department of Education, New Delhi.
(ii) Analysing the rationale underlying the Meghalaya English curriculum of the undergraduate level.
(iii) Planning long-term and short-term courses based on the given Syllabus.
(iv) Investigating the practical problems faced by the teachers of English in Meghalaya.

In discussing the U.G.C. proposals for improvement of the language competencies of students, the participants agreed that emphasis should be shifted from book learning to developing language skills, study skills, cognitive strategies for interpreting texts and discovery learning. The participants also agreed that streaming on the basis of merit and the specific needs of the students would help solve the problems of handling a large mixed ability group of students. The need for investigating the level of proficiency of the students in English and evaluating the learning outcome was also greatly felt by the participants.

A framework for analysing the Meghalaya English curriculum was developed to facilitate assessment of its merits and weaknesses. The analysis indicated that the principle of streaming had been adopted in principle in Meghalaya as different English syllabi have been recommended respectively for the B.A., B. Com., B.Sc., and Home Science students. However, a detached analysis suggests that these syllabi are not need based as there is a lot of overlap in the topics and teaching items included in these syllabi. It was also felt that the language papers in the syllabi are not properly graded and sequenced on a hierarchical basis from the P.U. to B.A. Compulsory Elective. Honours, B.Sc and B Com. levels.

The participants also felt that the majority of the college teachers have no say in designing the syllabus. It was suggested that the only way in which the teachers can *actively participate in planning and* re-orientation in teaching is by developing practical courses based on the given syllabus The workshop provided opportunities for training in long-term planning of courses to facilitate the process

On the concluding day a number of college teachers demonstrated some of the innovative methods they have used so far in their classes. These demonstrations as well as the innovative methods indicated that the carefully preserved opinions in some quarters, that college teachers on the main are inimical to changes and are allergic to innovative exercises, was a myth

University Information & Library Networking System

The University Grants Commission (UGC) has constituted a Committee under the Chairmanship of Prof. Yash Pal, Chairman, UGC to work out the details regarding University Information & Library Networking System (UNIFLIBNETS). The Committee at its first meeting held on 22nd April, 1988 decided to set up a working group consisting of librarians, Information Specialists, Computer Software Specialists, Tele-Communication Specialists and others. The working group has been asked to submit a Detailed Project Report within next 3 months indicating necessary details alongwith the estimated cost of the project

The working group has prepared a questionnaire on "Survey of the University Libraries" which has been sent to all the Vice-Chancellors of the Universities in India with a copy to the concerned university librarian. At its first meeting on 25th May, 1988, the working group decided, inter-alia, that Library/Bibliography Automation *may be done in respect of one University in the first instance* The University of Poona, Pune and the Jawaharlal Nehru University, New Delhi are being considered for the purpose. Filled in questionnaires and any other suggestion that may be helpful to the working group may be sent to Shri K. Gunasekaran, Education Officer, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002

SPU Develops a Teaching AID

The University Science and Instrumentation Centre (USIC) attached to the Sardar Patel University, Vallabh Vidyanagar, has developed a teaching aid based on analytical: (a) X-ray diffraction, and (b) Electron diffraction which are incorporated in B.Sc. as well as M.Sc. syllabi of the science colleges of Gujarat State. The cost of each teaching aid will be about Rs. 250/- Further details can be had from the Head, USIC, Sardar Patel

University, Vallabh Vidyanagar-388 120 (Gujarat).

New Professional Courses

The Sardar Patel University proposes to offer a 2-year M.Sc. Electronics course and a 2-year Postgraduate course in Computer (M.Sc. Computer) from the academic year 1988-89.

Refresher Course in Mathematics

The Academic Staff College, Bihar University, Muzaffarpur, organised a Refresher Course in Mathematics for College Lecturers from 18 April to 7 May, 1988 This was a need-based course with the broad objectives of equipping the participants to effectively cope with the core contents of Bachelor level syllabus which has been drastically modernised with the introduction of 3 year degree course in the Universities of Bihar The lecturers working in the constituent/affiliated colleges of the Bihar University and the L.N Mithila University, Darbhanga constituted the target group—26-from Bihar University and 11 from L N. Mithila University. The Head of the Deptt of Mathematics was Course Coordinator and the teachers of the Postgraduate Deptt and some teachers from outside acted as Resource Persons.

Since the universities of Bihar do not have at the moment new entrants, appointed on regular basis, in the Deptt/Colleges, the U.G.C. had desired the Bihar University Academic Staff College to conduct such a need-based refresher course in place of the usual orientation courses that are being organised by other A.S.Cs. It is proposed to conduct such refresher courses in other subjects also.

Environmentalists Meet

The 9th Annual Session of the Academy of Environmental Biology, India will be held at Valvada, District Bulsar, Gujarat from 29th to 31st December, 1988. A symposium on "Environmental Risk Assessment and Management" will be organised on the occasion. The main objective of the session will be to share the scientific knowledge and also to work out how best the common men should work for conserving and sustaining the cleaner environment.

Further details can be had from Dr P B Deshmukh, General Manager and Study Director, Jai Research Foundation, P O Valvada: 396 108, District Bulsar, Gujarat

Youth and Nationalism

Quoting Benjamin Disraeli that almost everything that was great, had been done by youth, Mrs. Kumudben Joshi, Governor of Andhra Pradesh, called upon the students to dedicate themsleves to the tasks of reiterating and restoring the unity and strength of the nation. Mrs Joshi was speaking on Youth and Nationalism at the Goa University

Stating that India's freedom was result of youth struggle on a national scale, Mrs Joshi exhorted the students to usher in peace and goodwill amongst students in universities by creating proper environment. She called upon students to rise above the narrow regimentations and disruptive forces of casteism, communalism, parochialism, distorted linguism, sectarianism and disruptive regionalism, which were shaking the foundation of our society.

She observed that university was an opportunity to students to formulate and imbibe a national character, dignity, honour and aspirations to achieve national progress. She said it was for the youth to destroy the 'poverty trap' and take up the initiative to provide a direction to the millions in the country's villages, shrouded in ignorance, superstition and tradition, and eradicate the evils of dowry, casteism, communalism and drug addiction.

Dr Gopal Singh, Governor of Goa and the Chancellor of the Goa University, stressed the need to discard obstructive mental hangups and bring about a social revolution to build the nation.

Diploma in Instrumentation

The Gauhati University has decided to introduce Diploma Course in Instrumentation in the Department of University Services and Instrumentation Centre (USIC). The Diploma Course, which is endorsed by the UGC, will cater to the needs of the technicians of the entire North-Eastern Region of the country.

JNU-IGNOU to Produce Video Software

The Jawaharlal Nehru University and Indira Gandhi National Open University (IGNOU) have joined hands in the production of educational video and audio software for the upliftment of national educattional standards. An agreement has been signed between the two universities for making available video and audio studios at JNU to Indira Gandhi University for educational video software production

During May 1988, three video and two audio programmes were recorded. The video programmes titled "Writing for the Children", "Unit Design for Distant Learning" and "Management" were directed by Miss Vibha Sharma, Mr. Yusaf Mehta and Miss Zeba Khan. The JNU team headed by Engineer V.K. Sahni, Maintenance Engineer, Language Lab Complex is working in close coopération with IGNOU team to produce excellent quality educational software. Possibilities are also being explored for the development of software of common interest to both the Universities.

News from Agril. Varsities

Parmar Varsity Dedicated to the Nation

The Prime Minister of India, Shri Rajiv Gandhi, dedicated the Dr. Y.S. Parmar University of Horticulture and Forestry, Solan to the Nation on 30th April, 1988 in a formal ceremony at the University Campus, Nauni (Solan), In his address the Prime Minister said that this was the first University of its kind in Asia and second in the entire world, which would help transform Himachal Pradesh into a prosperous state. He said that the Union Govt. would give special aid for the development of horticulture, food processing industries and assured full assistance and cooperation to the University in the field of research and extension education.

Mr. Gandhi commended the achievements of the State in the field of horticulture and said that the University at Solan would benefit the farmers and orchardists by disseminating the latest knowledge in the field of horticulture and forestry.

Mr. Gandhi planted a sapling of 'Khirk' (Nettle wood) which is a local fodder tree and is used for fuel and fodder. He also released a book "Production and Conservation of Forests" written by Dr. P.K. Khosla, Dr. D.K. Khurana and Mr. Atul of the University. A book "Apple Production Technology and Economics" authored by Mr. S.M. Kanwar, the Agricultural Production Commissioner of the State was also presented to Mr. Gandhi. University publications were presented to Mr. Gandhi by Dr. M.R. Thakur, Vice-Chancellor of the University.

Shri Virbhadhra Singh, Chief Minister of the State said that this University would also serve the twin purpose of preservation of eco-system and environment in the state

Dr. M R. Thakur, Vice-Chancellor of the University said that since the State Government was wedded to conserve and preserve the ecology, environment and natural resources of the State and to alleviate the poverty of its people through its various policies and programmes, the University will provide necessary technology to harness the available potential. Dr. Thakur assured that University will serve the cause of hill horticulture and forest farming in the best possible manner.

Summer Institute on Buffaloes

In the Indian context, scientists should specially look into particular problems and constraints of buffalo production and management at the level of the small farmers who own nearly 80% of the buffaloes of the country, said Dr. Har Swarup Singh, Vice-Chancellor Haryana Agri. University, Hisar (HAU). He was inaugurating a Summer Institute on Optimisation of Buffalo Production through Management organised at the College of Animal Sciences.

Dr. Singh disclosed that since 1972 buffalo numbers have increased by nearly 3.5% in Haryana despite the fact that an estimated 50,000 high yielding buffaloes are being exported from the State to other States of the country and abroad.

He called upon the scientists to draw up a comprehensive and integrated buffalo development programme with regard to traditional problems of buffalo production like high calf mortality, late maturity, summer depression of mortality, etc.

The Summer Institute was presided over by Dr. R. Nagarcenkar, Director, National Dairy Research Institute, Karnal. He lauded multidisciplinary integrated research at the buffalo research centre at HAU which has established a nucleus of elite murah buffallo germ-plasm for genetic improvement of this world famous breed.

About 30 scientists attended the Summer Institude organised by the Department of Livestock and Management.

Castor Sheller

The Tamil Nadu Agricultural University (TNAU) has developed and evaluated a hand power operated castor sheller It consists of a trapezoidal feed hopper with a shutter to regulate the feed rate, shelling discs and a screw auger to convey the castor pods in between shelling discs. The shelling discs are made of two wooden discs fastened with 6 mm thick rubber sheet. One of the discs is rigidly fixed to the frame and the other is mounted on the rotating shaft. The clearance between the *discs is adjustable and* the rotating discs is held against the stationary disc by means of a compression spring. A fly wheel is provided for easy operation. A blower is fitted to clean the shelled castor. The unit can be either operated manually without connecting the blower or operated by a 0.5 hp electric motor with blower.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles culled from periodicals received in the AIU Library during May, 1988

EDUCATIONAL PHILOSOPHY

Das, R C Education in values. *J. Indian Edn.* 13(4), 1987, 37-42.

Fincher, Cameron. Knowledge, competence, and understanding as educational outcomes. *Res. Hr. Edn.* 27(3), 1987, 283-8.

EDUCATIONAL PSYCHOLOGY

Tripathy, P K. Curriculum development and testing : Piagetian approach. *J. Indian Edn.* 13(4), 1987, 24-7.

EDUCATIONAL SOCIOLOGY

Aijaz, Roohi Correcting educational imbalance of North-Eastern region. *Yojana* 32(7), 1988, 22-24.

Srinivas, M N. In pursuit of excellence. *Mainstream* 26(30), 1988, 9-11.

EDUCATIONAL PLANNING

CABE REVIEWS New Education Policy. *Yojana*, 32(7), 1988, 12-13, 18

Khullar, K.K. Diffusion of literacy in 1987. *Yojana* 32(7), 1988. 14-18.

EDUCATIONAL ADMINISTRATION

Cuthbert, Robert E. Quality and management in higher education. *Studies in Hr. Edn.* 13(1), 1988, 59-68.

Eustace, Rowland. The criteria of staff selection : Do they exist ? *Studies Hr. Edn.* 13(1), 1988, 69-88.

Gupta, G S. Administrative leadership behaviour as related to the organisational climate of colleges affiliated to Rohilkhand University. *Indian Ednl. Rev.* 22(4), 1987, 80-4.

Hurst, Paul. Microcomputer applications in educational management. *Prospects* 17(3), 1987, 431-44.

CURRICULUM

Neuner, Gerhart. General education and subjects of instruction. *Prospects* 17(3), 1987, 333-45.

Sherman, Edward F. The role of religion in school curriculum and textbooks. *Academe* 74(1), 1988, 17-22.

TEACHERS & TEACHING

Barta, Ben-zion. Training of educational staff for the information technology age. *Prospects* 17(3), 1987, 397-406.

Bourai, H.H.A. Educating college teachers. *J. Indian Edn* 13(4), 1987, 43-7.

Dorsel, Thomas N. External work by faculty : An opportunity and a responsibility. *Hr. Edn. Rev.* 20(2), 1988, 61-4.

Rutherford, Desmond. Performance appraisal : A survey of academic staff opinion. *Studies Hr. Edn.* 13(1), 1988-89-100.

Shears, Arthur E. Developing training skills : A Saudi Arabian modular course. *British J. Ednl. Tech.* 19(2), 1988. 105-113.

EDUCATIONAL RESEARCH

Rudd, Ernest. The evaluation of the quality of research, (1). *Studies Hr. Edn* 13(1), 1988, 45-57.

Smith, Kerry and Bers, Trudy. Improving alumni survey response rates : An experiment and cost-benefit analysis. *Res. Hr. Edn.* 27(3), 1987, 218-25.

EDUCATIONAL TECHNOLOGY

Friend, Jamesine. Classroom uses of the computer : A retrospective view. *Prospects* 17(3), 1987, 367-78

Hartley, J R. The innovation of computer-assisted learning. *British J. Ednl. Tech.* 18(3) 1987, 210-20.

Papagiannis, George J and Milton, Sande. Computer literacy for development : An evolving metaphor. *Prospects* 17(3), 1987, 355-66.

Sewell, Dave F and Rotheray, David R. The application of computers in education. *Prospects* 17(3), 1987, 379-85.

Thorne, Michael. The legacy of the microelectronics education programme. *British J. Ednl. Tech.* 18(3), 1987, 165-181.

EDUCATIONAL EVALUATION

Banta, Trudy W. and others. Estimated student score gain on the act comp. exam Valid tool for institutional assessment ? *Res. Hr. Edn.* 27(3), 1987, 195-217.

Bradburn, Norman M. The ranking of universities in the United States and its effects on their achievement. *Minerva* 26(1), 1988, 91-100.

Church, Clive H. The qualities of validation. *Studies Hr. Edn.* 13(1), 1988, 27-43

Moodie, Graeme C. The debates about higher education quality in Britain and the USA. *Studies Hr. Edn.* 13(1), 1988, 5-13.

Pollitt, Christopher. Models of staff appraisal : some political implications. *Hr. Edn. Rev.* 20(2), 1988, 7-16.

Ved Prakash. How to write good multiple choice test items in Chemistry. *Indian Ednl. Rev.* 22(4), 1937, 114-25.

ECONOMICS OF EDUCATION

Blume, S.S. and Spaapen, J.B. External assessment and 'Conditional Financing' of research in Dutch Universities. *Minerva* 26(1), 1988, 1-30.

Eicher, Jean-Claude. The costs of the new information technologies in education : What do we know ? *Prospects* 17(3), 1987, 445-58.

SCIENCE EDUCATION

Rajput, J.S. Science for all : Role and competence of teachers. *J. Indian Edn.* 13(4), 1987, 12-17.

VOCATIONAL EDUCATION

Gingras, Yves and Gagnon, Robert. Engineering education and research in Montreal : Social constraints and opportunities. *Minerva* 26(1), 1988, 53-65.

EDUCATIONAL JOURNALISM

Fitzgerald, Jill. Research on revision in writing. *Rev Ednl. Res.* 57(4), 1987, 481-506.

ADULT EDUCATION

Nimbalkar, M R. Adult education programme in Goa during the period 1978-82 : An evaluation. *Indian Ednl Rev* 22(4), 1987, 91-8.

DISTANCE EDUCATION

Rathore, H C S. Candid classroom videotapes : Implications for distance education. *J Indian Edn* 13(4), 1987, 2-11.

Sharma, R.A and Yadav, Siya Ram Cost and academic performance of correspondence education in Indian universities. *Indian Ednl. Rev* 22(4), 1987, 48-54

COMPARATIVE & COUNTRY STUDIES

Lenoir, Timothy. A magic bullet : Research for profit and the growth of knowledge in Germany around 1900. *Minerva* 26(1), 1988, 66-88.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Marine Biology

1. Koya, M.S. Syed Ismail. *Ecobiology of helminth parasites of finfishes and shellfishes of Cochin waters with special reference to digenetic trematodes.* CUST. Dr. A Mohandas, Reader, School of Environmental Studies, Cochin University of Science and Technology, Cochin.
2. Naik, Ulhas Ganesh. *Studies on the plankton and productivity of Kali Estuary and inshore waters of Karwar.* Karnatak Dr. B. Neelakanthan, Chairman, Department of Studies in Marine Biology, Kodibag, Karwar.
3. Suresh, K. *Haematology of some marine and estuarine molluscs of commercial importance.* CUST. Dr. A. Mohandas, Reader, School of Environmental Studies, Cochin University of Science and Technology, Cochin.

Biochemistry

1. Upadhyay, Avinash Ajay. *Certain biochemical aberrations in diabetic polymorphonuclear leukocytes during phagocytosis.* Nagpur. Dr. N. Nath, Reader, Department of Biochemistry, Nagpur University, Nagpur.

Botany

1. Anil Kumar. *Phytosociological and productivity studies of Bhadarwah Forests, Jammu (J & K).* Jammu. Dr. Shashi Kant, Reader, Department of Botany, University of Jammu, Jammu.

2. **Antony, Johny.** *Microbiological activities in the root region of coconut, Cocos nucifera Linn.* Kerala. Dr. N.P. Jayasankar, Joint Director, Central Plantation Crop Research Institute, Regional Station, Kayamkulam.

3. **Datta, Soumana.** *A study of pathogenesis of certain nematode diseases of guar, Cyamopsis tetragonoloba L and their control.* Rajasthan. Dr. B. Tiagi, Department of Botany, University of Rajasthan, Jaipur and Dr. P.C. Trivedi, Department of Botany, University of Rajasthan, Jaipur.

4. **Deb, Pronoy Ranjan.** *Studies on the effect of organic-inorganic amendments on the soil and rhizosphere microflora in relation to the biology and control of soil borne plant pathogen, i e. S clerotium rolfsii.* NEHU. Dr. B.K. Dutta.

5. **Jha, Vidyanath.** *Cytochemo-ecological studies of Euryale ferox Salisbury in North Bihar.* Ranchi.

6. **Krishnamurthy, R.** *Impact of sodium chloride on the metabolism of rice, Oryza sativa L varieties differing in salt resistance.* Baroda.

7. **Lalrawna.** *Study on seed mycoflora of rice, Oryza sativa L grown in Mizoram.* NEHU. Prof. R.R. Mishra, Head, Department of Botany, North Eastern Hill University, Shillong.

8. **Lenjewar, Sharad Gangadhar.** *Fossil flora of the Deccan intertrappean exposures of India* Nagpur. Dr. N R Yewale, Department of Botany, Institute of Science, Nagpur.

9. **Mand, Sangeeta.** *Physiological and genetic studies on guar, Cyamopsis tetragonoloba rhizobia with particular reference to plasmids.* HAU.

10 **Mandal, Wahed Ali** *Studies in monocarpic senescence of some rice cultivars.* Burdwan. Prof Monojit Acharya Choudhuri, Department of Botany, University of Burdwan, Burdwan.

11. **Mondal, Tapati.** *Physiological and biochemical studies on some naturally occurring edible fungi in the plains of West Bengal.* Calcutta

12 **Niranjana Murthy, H** *Cytogenetical studies in Guizotia case, (Coreopsidinae-Compositae)* Karnatak. Dr S. C. Hirenath, Reader, Department of Studies in Botany, Karnatak University, Dharwad

13. **Padala, Satish** *Studies on selected cyatheaceous fern taxa of Rajasthan.* Rajasthan. Dr. T. N. Bhardwaj, Department of Botany, University of Rajasthan, Jaipur.

14. **Rathi, Seema Narendra.** *Palynological investigations on some papilionaceous crop plants* Nagpur. Dr. G. V. Patil, Department of Botany, Institute of Science, Nagpur.

15. **Sheikh Maqsood Ahmed.** *Studies on the inheritance of qualitative and quantitative characters and resistance to Fusarium wilt caused by Fusarium oxysporum f sp lini in linseed, Linum usitatissimum L.* Rajasthan. Dr. S K. Agarwal, Department of Botany, Govt. College, Kota.

16. **Thakre, Rameshchandra Gulabrao.** *Induced mutants in blackgram, Vigna mungo (L) Hepper.* Nagpur. Dr. C. R. Bhatia, Nuclear Agriculture Division, Bhaba Atomic Research Centre, Trombay, Bombay.

17. **Wankhar, Borabell.** *Biology of Centella asiatic (Linn) urb : A medicinally important clonal perennial* NEHU. Dr R. S. Tripathi, Prof., Department of Botany, North Eastern Hill University, Shillong.

Zoology

1. **Datta, Gungun.** *Morpho-histochemical and autoradiographic studies on the internal reproductive organs of some insects of West Bengal.* Burdwan. Dr. Mahitosh Banerjee, Reader, Department of Zoology, University of Burdwan, Burdwan.

2. **Debnath, Gopal Chandra.** *Studies on fresh water fishes of Visakhapatnam with special reference to the larvicidal fish Gambusia affinis, Baird and Girard (Osteichthyes : Atheriniformes : Poeciliidae).* Andhra.

3. **Debnath, Jogendramohan.** *Physiological studies on the effect of cyanocobalasin on magur fish, Calrias batrachus.* Calcutta.

4. **Gupta, Sushma.** *Histozoic and coleozoic myxozoan parasites (Protozoa : Myxozoa, Myzosporea) of freshwater fishes of Northern India.* Panjab.

5. **Jain, Nirmala.** *Studies on the hepatotoxicity of an organophosphate phosphamidon in Swiss albino mice.* Rajasthan. Dr Pradeep Bhatnagar, Department of Zoology, University of Rajasthan, Jaipur.

6. **Lal, Deepali** *Studies on the efficacy of chitin synthesis inhibitors including the histopathology of peritrophic membrane against Tribolium castaneum and Heliothis armigera.* Rajasthan. Dr. S. C. Saxena, Prof, Department of Zoology, University of Rajasthan, Jaipur.

7 **Laxma Reddy, Ramalingam.** *Some aspects of the regulation of ovarian function in the rat and bonnet monkey.* Hyderabad. Prof P R. K Reddy, Reader, Department of Life Sciences, University of Hyderabad, Hyderabad.

8. **Mehrotra, Vimal.** *Studies on seasonal variations on certain haematological parameters in the Indian Camel, Camelus dromedarius and their association with growth rate.* Rajasthan. Dr M. L Gupta, Department of Zoology, Dungar College, Bikaner.

9. **Purohit, Ashok K.** *Antifertility studies of neem plant materials in male rat with special reference to lipid metabolism affecting reproduction* Rajasthan Prof. V. P. Dixit, Department of Zoology, University of Rajasthan, Jaipur.

10. **Ram Singh.** *Ecological, behavioural and biological studies of rodents in Jaipur region and their control.* Rajasthan Dr. Y. Saxena, 6-A Kalyan Path, Police Memorial Circle, Jaipur.

11. **Ramadevi, Kasireddy Ramalakshmi Satya.** *Studies on the ghost crab, Ocypoda platytarsis Milne-Edwards, (Crustacea : Bracchyura).* Andhra.

12. **Ratna Kumar, Balla Vijaya.** *The ultrastructure and functional characterization of the cell types in the epididymis of rhesus monkey, Macaca mulatta.* H S. Gour. Dr. B S. Setty, Asstt. Director, Division of Endocrinology, Central Drug Research Institute, Lucknow and Dr. A. C. Shipstone, Asstt. Director, Electron Microscope Unit, Central Drug Research Institute, Lucknow.

13. **Seshachalam, R. V.** *Studies on the metabolism of a few selected amino acids in the silkworm, Bombyx mori L.* Bangalore. Dr. A. R. Kasturi Bai, 46, Vth Main Road, Jayamahal Extension, Bangalore and Dr. R. V. Krishnamoorthy, Assoc. Prof, Department of Zoology, University of Agricultural Sciences, Bangalore.

14. **Sharma, Savita.** *An investigation on the mode of action of postcoital antifertility agents during implantation stages of pregnancy in rat.* Rajasthan. Dr. Dennis Jacob, Assoc Prof, and Dr. D. K. Vyas, Department of Zoology, University of Rajasthan, Jaipur.

15. **Singh, N. Ibotombi.** *Structure and behaviour of meiotic prophase chromosomes in Indian silkworms, Antheraea and*

Philosamia species. Manipur. Dr. S. C. Kundu, Department of Life Sciences, Manipur University, Imphal.

16. Surendar Singh. *Survey of insecticides from the aquatic environment and their interaction with microorganisms*. Rajasthan. Dr. Pradeep Bhatnagar, Department of Zoology, University of Rajasthan, Jaipur.

17. Viswanadham, Bammidi. *Studies on littoral bryozoa, Ectoprocta at Visakhapatnam, Bay of Bengal, India*. Andhra.

18. Wadhwa, Vibha *Investigations on the effects of certain posticide combinations on the urinogenital organs of Baster domesticus L.* Rajasthan. Dr. P. P. Bakre, Department of Zoology, University of Rajasthan, Jaipur.

Agriculture

1. Anbudhurai, R. Ponnin. *Effect of methyl parathion, an organophosphorous insecticide on photosynthetic electron transport*. Madurai.

2. Bandu, Mahabari Mohammed. *Effects of some growth regulators, chemicals and stage of maturity on ripening of bananas, Musa paradisiaca L.* M. P. Agrl. Dr. B. B. Desai, Head, Department of Biochemistry, Mahatma Phule Agricultural University, Rahuri.

3. Chaudhari, Suresh Madhav. *Studies on heterosis, combining ability and correlations in bitter gourd, Momordica charantia L.*. MP Agrl. Dr. P N. Kale, Prof. Department of Horticulture, Mahatma Phule Agricultural University, Rahuri

4. Dabas, Dharam Singh. *Studies on molybdenum availability in Haryana soils*. HAU.

5. Foning, Mikthuk S. *Studies on flower and seed production in some winter annuals*. Calcutta.

6. Ganga Krishan, A. *Genetic analysis of cytoplasmic systems in grain sorghum, Sorghum, bicolor (L) Moench*. Marathwada Agrl. Dr. S. T. Borikar, Seed Research Officer, Seed Unit, Marathwada Agricultural University, Parbhani.

7. Godara, Anil Kumar. *Studies on the quality improvement of grapes and standardisation of raisin making*. HAU.

8. Gupta, Ravinder. *Soil hydrothermal variations associated with different mulches and their impact on the growth and yield of strawberry*. HP Krishi. Dr. C. L. Acharya, Department of Soil Science and Water Management, College of Agriculture, Palampur.

9. Ishwar Singh. *Response of aestivum and durum wheat varieties to different levels of irrigation and fertility*. HAU.

10. Jagdish Chander. *Studies on genetics of seed vigour, yield and its components in Indian mustard. Brassica juncea (L) Czern and Coss*. HAU.

11. Kutaaj, Sukhwinder Singh. *Biological control of bacterial leaf sport of mungbean. Xanthomonas campestris pr. Vigna radiatae*. PAU.

12. Mahla, Jagdish Chander. *Bio-ecology of sugarcane shoot borer, Chilo infuscatellus Snellen*. HAU.

13. Mangat Ram. *Studies on the production potential of raye, Brassica juncea (L) Czern and Coss, varieties under varying irrigation and fertility levels*. HAU.

14. Sharma, Girish Kumar. *Mutation studies in apple, Malus domestica/pumila*. YS Parmar. Dr. R. L. Sharma, Chief Scientist, Horticultural Regional Research Station, Bajaura, Distt. Kullu, H.P.

15. Shyam Lal. *Studies on genetic divergence, phenotypic stability and non-allelic interactions in pigeonpea*. HAU.

16. Singh, Bachchan Prasad. *Studies on Alternaria leaf spot of important cruciferous vegetables in Bihar*. Rajendra Agrl.

17. Singh, Parvinder Pal. *Hybridization studies in mandarin cultivars, citrus reticulata Blanco*. PAU.

18. Sinha, Ram Nandan *Investigations on red spot disease of sugarcane caused by Colletotrichum falcatum Went in Bihar* Rajendra Agrl.

19. Tak, Gh. Mohi-ud-din. *Studies on gene action for seed yield and fibre traits in linseed, Linum usitatissimum L.* HP Krishi. Dr. N. D. Rana, Department of Plant Breeding, College of Agriculture, Palampur.

20. Vinod Kumar. *Studies on osmoregulation in cultured cells of Vigna radiata (L) Wilczek var, radiata*. HAU.

21. Yash Pal. *Genetic studies on white rust, Albugo candida; seed yield and its attributes in Indian mustard, Brassica juncea (L) Czern and Coss*. HAU.

Medical Sciences

1. Bhattacharyya, Samita. *Role of macrophages in resistance to cancer and modulation of its functions*. Calcutta.

2. Dhenge, Sunanda. *Studies on fracture on hard sheets* HS Gour. Dr. H.S. Maheshwari, Department of Criminology and Forensic Science, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

3. Harbans Singh. *Development of hydrosurgery equipment (water scalpel): Its workability, efficacy and acceptability in hepatic surgery, an experimental study*. Rajasthan. Dr. R N Jhanji, Prof. and Head, Department of Surgery, J L N Medical College, Ajmer.

4. Mukhopadhyay, Debnath. *A study on some drug therapies in acute myocardial infraction for reduction of infarction size and its clinical evaluation*. Calcutta.

5. Sapru, Mohan K *A study on the molecular (biochemical) basis of major psychiatric disorders*. Bangalore. Dr. B S Sridhara Rama Rao, Prof. and Head, Department of Neuro Chemistry, National Institute of Mental Health and Neuro Sciences, Bangalore.

6. Shah, Raksha Shashikant. *Studies on human fetal and neonatal development in relation to gestational age, body weight and maternal nutritional status with special reference to lipids and lipid soluble vitamins*. Baroda

7. Suresh Babu, N.P. *Studies on human filariasis with reference to detection, strain variation and development of microfilariae*. Kerala. Dr. R. Kaleysa Raj, Prof. and Head, Department of Biochemistry, University of Kerala, Kariavattom, Trivandrum.

Veterinary Science

1. Dina Nath Prasad. *Study on digestion and metabolism of nutrients relative to buffalo, cattle and sheep*. HAU.

2. Gurmej Singh. *Genetic analysis of closed flocks of avikalin and avivastra strains of sheep*. PAU.

3. Punia, Jogender Singh. *Studies on the disposition of norepinephrine and epinephrine in small intestine of WLH chicken*. HAU.

EDUCATION NEWS INDEX

A List of Select Articles and Editorials on Education from Newspapers received in the AIU Library during May, 1988.

EDUCATIONAL PHILOSOPHY

Ansari, Habeebulhaque. Iqbal on education. *Patriot*, 29 May '88

Mathur, V.S. Need to recapture the Gurukul Spirit. *The Hindu* 3 may, 1988.

Subramanyam, Ka Naa. Education : Then and now *Deccan Chronicle*, 8 May, 1988

EDUCATIONAL SOCIOLOGY

Khan, Asif Role of universities in rural development *The Indian Nation*, 29 May, 1988

EDUCATIONAL PLANNING

A NATIONAL CAMPAIGN (Editorial) *Patriot* 7 May, 1988.

Atma Ram. A policy in search of excellence *The Hindu* 31 May, 1988

Bose, Hiren. Literacy mission a pipe dream *Free Pres Journal* 13 May, 1988

Dasgupta, R K The idea of a college *Amrita Bazar Patrika* 1st May 1988

HIGH SPEED LITERACY (Editorial) *The Tribune* 7 May, 1988

Joshi Navin Chandra Imperatives of literacy drive *Deccan Chronicle*, 2 May 1988

LITERACY AND PROGRESS (Editorial) *The Hindustan Times* 7 May 1988

THE OFFENSIVE AGAINST ILLITERACY (Editorial) *The Hindu* 9 May, 1988

Vyas Neena Literacy—Key to faster progress *The Statesman*, 3 May 1988

EDUCATIONAL ADMINISTRATION

A LOST GENERATION (Editorial) *The Poineer* May 5 1988

NCERT MUDDLE (Editorial) *The Hindustan Times*, 17 May, 1988

Puri, Rakshat Hindustani in DU *The Hindustan Times* 31 May, 1988

EDUCATION AND POLITICS

Hardwari Lal. Politics and varsities—I & II. *The Tribune* 22 & 29 May, 1988.

CURRICULUM

Bhattacharya, Jibesh The teaching of English at the honours level. *Amrita Bazar Patrika*, 31 May, 1988

Md Khairozzaman, A E. Study of humanistic social sciences. *The Assam Tribune* 1 May, 1988.

Raghavan, B S. American interest in Indian studies. *The Hindu* 31 May, 1988

Raychaudhuri, Tapan Education in humanities—Can we reduce the waste ? I & II. *The Times of India*, 16 & 17, May, 1988.

LANGUAGE & LANGUAGE POLICY

Ray, Arabinda, Education does not mean competence in English *The Telegraph*, 20 May, 1988

VOCATIONAL EDUCATION

MEDICAL EDUCATION : TOO MANY LEAKS *The Telegraph* 23 May, 1988

Varadan, M S S Reorienting academic structure for MBAS. *The Hindu* 26 May, 1988

Warrier, B S Technician training problems. *The Hindu* 31 May, 1988

DISTANCE EDUCATION

ANOTHER DEGREE MACHINE (Editorial) *National Herald* 17 May, 1988

Anjanappa K Open universities—lessons from the Thai model *The Hindu* 3 May, 1988

TEACHERS & TEACHING

Amrik Singh Housing for teachers. *Amrita Bazar Patrika* 9 May, 1988.

——————Teachers' perks and facilities. *The Tribune* 17 May, 1988

——— ———Transfer bane plaguing teachers *The Poineer* 15 May, 1988

Bhogle, A D Lacuna in undergraduate classes. *The Hindu* 10 May, 1988

Sridhara, M V Teacher evaluation Some problems *The Hindu* 24 May, 1988

EDUCATIONAL RESEARCH

Bhatia, Sneh Lata. Search and research for technology. *The Economic Times*, 23 May, 1988

Nandakumar, Prema Obstacle races in research *The Hindu* 16 May, 1988.

Ramachandran, R. Indo-U.S research muddle *The Hindu* 31 May, 1988

EDUCATIONAL EVALUATION

Amrik Singh Menace of mass copying *The Tribune*, 4 May, 1988.

Parthasarathy, R. Examinations. Copying with complexity. *The Hindu*, 24 May, 1988.

WHOSE RESPONSIBILITY ? *The Indian Nation* 2 May, 1988.

ECONOMICS OF EDUCATION

Ajit S. Gopal. Brain drain or investment? *The Tribune* 8 May, 1988.

✓Amrik Singh. Capitation fee : Myth and reality. *The Tribune* 30 May, 1988.

BUNGLING IN SCIENCE (Editorial). *The Hindustan Times*, 3 May, 1988.

CRISIS IN VARSITIES (Editorial). *Indian Nation*, 1 May, 1988.

FUNDS FOR VARSITIES (Editorial). *The Indian Nation*, 7 May, 1988.

PAY AS YOU LEARN (Editorial) *The Pioneer* 26 May, 1988.

BOOKS & LIBRARIES

Chopra, Ashok. Copyrights and copywrongs. *The Tribune* 8 May, 1988.

Dasgupta, R.K. Idea of an information centre. *Amrita Bazar Patrika*, 29 May, 1988

STUDENTS & STUDENT ACTIVITIES

Shamsuddin. Graduating to mediocrity. *Free Press Journal* 27 May, 1988.

ADULT EDUCATION

Lalitha Murali. Teaching aids must contribute to learning *The Hindu*, 10 May, 1988.

Menon, S.V. Literacy link with jobs. *The Indian Nation*, 1 May, 1988.

Sekhar, Chitra. Adult literacy. *The Indian Nation*, 9 May, 1988

INTERNATIONAL CO-OPERATION

Khan, Asif. Commonwealth of learning. *The Indian Nation* 25 May, 1988.

———— Commonwealth varsities. *The Indian Nation* 23 May, 1988.

BIOGRAPHIES

NO MOURNING FOR HIM (Editorial) (Zakir Husain) *The Tribune* 22 MAY, 1988.

UNIVERSITY OF KERALA

UNIVERSITY BUILDINGS
TRIVANDRUM

No. Ad. DI 2 2994/88

Dated 23rd May, 1988

NOTIFICATION

Applications are invited from qualified candidates for appointment to one post of Lecturer on Rs 1300-2725 in the University Department of Computer Sciences. The vacancy is reserved for S.C./S.T. candidates.

Qualifications

(a) 1 First or Second Class M.Sc., M.Tech. or M.Sc. (Engg.) in Computer Science with not less than 50% marks of an Indian University or equivalent qualifications from a foreign University.

OR

2. First or Second Class Master's Degree in Mathematics, Physics, Statistics or Operations research B.E. or B.Sc. (Engg.) in Electrical Electronics Engineering of an Indian University or equivalent qualification from a foreign University.

(b) Two years experience in teaching/research and development industry in Computer Science and Applications.

Desirable : Experience in the utilization of a large Computer System.

Note : Requirement of experience may be relaxed in the case of candidates having outstanding research/industry academic achievements in the field of Computer Science and Applications.

The qualifications prescribed under 2 (b) above are relaxable in respect of the candidates from Reserved Communities.

Age : Not more than 40 years as on 1-1-1988 (Usual relaxation of 5 years for S.C./S.T. candidates and 3 years for O.B.C. candidates will be allowed).

In the absence of suitable candidates from the reserved community, applications from other reserved communities will be considered in accordance with the rules relating to communal rotation. In the absence of suitable candidates from any of the reserved communities, applications from forward community candidates will also be considered.

Request for application form accompanied by S.B.T. challan receipt for Rs. 2/- remitted under Kerala University Fund Account or Crossed Postal Order for value of Rs 2/- payable to the Finance Officer, University of Kerala, Trivandrum (in the case of candidates residing outside Kerala State only) should be addressed to the Deputy Registrar (Administration-II), University of Kerala, Trivandrum Pin 695 034

The last date for receipt of completed applications is **30 June, 1988.**

REGISTRAR

MINISTRY OF DEFENCE

DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DRDO)

Applications from Young Engineering Graduates with aptitude for Research and Development are invited for the following Fellowship Courses in DRDO :

1.	**FOURTH ELECTRONICS FELLOWSHIPS COURSE**	100	UR—77 SC—15 ST— 8
2	**INTEGRATED MECHANICAL ENGG FELLOWSHIP COURSE**	30	UR—23 SC— 5 ST— 2
3.	**SENIOR FELLOWSHIP COURSES IN GUIDED MISSILE TECHNOLOGY LEADING TO M.E. M. TECH. DEGREE**	30	UR—23 SC— 5 ST— 2

The fellowships are tenable for 12 to 18 months in various Institute universities. The selected fellows have to undergo training in specialised courses On successful completion of courses they may be absorbed as Scientists 'B' (Central Service, Group 'A' Gazetted, Pay Scale : Rs 2200-4000) in Defence Research Development Service (DRDS).

Admission criteria and eligibility conditions for each fellowship programme is given in the succeeding paragraphs :

(1) ELECTRONICS FELLOWSHIP COURSE

Selected candidates would have to undergo specialised training as Fellows at Institute of Armament Technology, Pune for a period of 12 months The fellows will have to pass such tests as are prescribed by the Institute.

Eligibility

(a) **Age** : Not exceeding 26 years (relaxable by 5 years in case of SC/ST candidates and Govt servants. Age will be reckoned as on 29 June, 1988.

(b) **Educational Qualifications Essential** : At least second class Master's degree in Physics Applied Physics with specialisation in Electronics Solidstate Physics or second class Bachelor's degree in Electronics and/or Communication Engineering from a recognised university or equivalent.

(Candidates appearing in qualifying examination may also apply. Their candidature will be considered provisionally subject to their acquiring the essential qualifications by 31st July, 1988)

Desirable : GATE qualified candidates will be preferred.

(2) INTEGRATED MECHANICAL ENGG FELLOWSHIP COURSE

Fellowships are tenable for a duration of 12 months during which candidates would have to undergo training at the Institute of Armament Technology, Pune. They would have to pass such tests as are prescribed by the Institute. After initial training phase, fellows would be specialising in Gas Turbine Technology/Armament/Automobile/Structures/Robotics etc. 10 Fellowships are earmarked for Gas Turbine Technology course and 20 for other specialisations,

Eligibility

(a) **Age** : Not exceeding 26 years (relaxable by 5 years in case of SC ST candidates and Govt. servants). Age will be reckoned as on 29 June, 1988.

(b) **Educational Qualifications** : **Essential** : At least second class Bachelor's degree in Mechanical or Aeronautical Engg. from a recognised university or equivalent.

Desirble : GATE qualified candidates will be preferred.

(3) SENIOR FELLOWSHIP COURSE IN GUIDED MISSILE TECHNOLOGY LEADING TO M.E./M. TECH. DEGREE.

The fellowships are tenable for a duration of 18 months during which selected candidates would have to undergo specialised courses leading to post-graduate degree in the subject concerned. The candidates should send their applications direct to University Institute (addresses are given below) for the programme in which admission is sought. Candidates who will be admitted by the Universities Institutes for their M Tech programmes will alone be considered for the award of these fellowships. All desirous candidates therefore should apply for admission to these Universities/Institutes simultaneously. Names of Universities Institutes where these courses are run, number of fellowships, qualification requirements and the addresses at which the applications should be forwarded are given below :

Name of the University/ Inst.	No. of Fellowships	Name of the Course	Qualification requirements	Address for forwarding applications
I	II	III	IV	V
Indian Institute of Science, Bangalore-560 012	6	Flight Dynamics, Control Computer Science	Graduate in Aero/ Mechanical Engg./ Computer Science	Dy. Registrar
Indian Institute of Technology Madras-600 036	4	Composites Production & Design.	Graduate in Aero/ Mechanical Engg.	Head, Dept. of Aeronautical Engg.

Indian Institute of Technology, Delhi - 110 016	3	MMW system and devices, Signal Processing	Graduate in Electrical/ Electronic/ Micro-wave Engg.	Head, Centre for Advanced Research in Electronics.
Indian Institute of Technology, Kanpur-208016	3	Computer Sciences and Simulations, Composite materials structure	Graduate in Computer Science/ Mech. Engg.	Dean Academic
Indian Institute of Technology, Kharagpur-721 302	4	MMW Signal processing	Graduate in Electrical/ Electronics Engg.	Head, Dept of Electronics
Osmania University, Hyderabad-500 007	4	Signal Processing & Micro Electronics	Graduate in Electrical/ Electronics Engg.	Head, Dept of Electronics & Communication Engg.
Jadavpur University Calcutta-700 032	3	Guidance Algorithm, Software	Graduate in Electrical/ Electronics Engg/ *Computer* Science	Head, Dept of Electronics Engg.
PSG College of Technology Coimbatore	3	Computer aided Design & Manufacturing	Graduate in Electronics/ Electrical, Mechanical Engg.	Head, Mech. Engg, Deptt.

Candidates enrolled under the followship scheme will undertake studies in one of the disciplines in the M.E. M.Tech programme in one of the Universities Institutes and specialise in the areas at the Institute choosing appropriate electives. They will be allotted project work by *the Institute* in consultation with DRDO and the work will be done in accordance with the required standards of the University/Institute.

Eligibility

(a) **Age** :—Not exceeding 26 years (relaxable by 5 years in case of SC/ST candidates and Govt. servants). Age will be reckoned as on 20 July, 1988.

(b) **Educational Qualifications** : **Essential** :—(i) At least second class Bachelor's degree in the subjects specified in column (iv) of the above table. (Candidates appearing at the qualifying examination may apply. Their candidature will be considered provisionally subject to their acquiring the essential qualifications by 31 July 1988). (ii) Passing of GATE 1988 examination.

General Conditions/Instructions

(1) Candidates working in Government/Public Sector/ Autonomous Organisations should apply through proper channel.

(2) Knowledge of German, French, Russian, Japanese or Chinese language is a desirable qualification in all cases.

(3) The prescribed Essential Qualifications are minimum and the mere possession of the same does not entitle candidates to be called for interview. Where the number of applications received in response to an advertisement is large and it will not be convenient or possible for the Recruitment and Assessment Centre (RAC) to interview all those candidates, the RAC may restrict the number of candidates for interview to a reasonable limit on the basis of qualifications/merit higher than the minimum prescribed in the advertisement.

(4) The RAC at their discretion, may hold a written test of candidates applying for Fellowship. No travelling or other allowance will be paid by the RAC for appearing at such written test. Only those qualifying in written test, (if held) will be called for interview. TA will be admissible for those called for interview. The number of Fellowships mentioned is tentative and may change.

(5) In case SC/ST candidates are not available in the required number, general candidates will be considered.

(6) Applications should be sent on the plain paper in the format given below (to be typed in A-4 size paper, 23 x 30 cm) accompanied by a crossed non-refundable current Indian Postal Order of the value of Rs 8.00 drawn in favour of Senior Accounts Officer, RAC, Defence Research and Development Organisation, payable at New Delhi There is no fee for Scheduled Caste Scheduled Tribe candidates.

(7) Self-attested copies of certificates in support of educational qualifications, experience etc should be attached with the application. Candidates will have to produce during interview the proof of details furnished by them in the application.

(8) The application should be accompanied by two self addressed unstamped covers of 23 cm x 10 cm size.

(9) Only typewritten applications will be accepted Incomplete applications will be rejected and no correspondence will be entertained in this respect.

(10) Only Indian nationals need apply.

(11) The applications should be sent to Director, Recruitment and Assessment Centre, Lucknow Road, Timarpur, Delhi 110007 preferably by registered post in a cover superscribed "Application for Fellowship Programme". Completed applications should reach latest by **29th June, 1988** for Electronic and Mechanical Engg. fellowships courses (items 1 and 2) and by 20th July 1988 in respect of Senior Fellowship Course for Guided Missiles Technology Course (item 3). Last date of receipt of applications for candidates from Andaman and Nicobar, Lakshadweep islands and abroad is 13 July/03 Aug. **1988 respectively.**

(12) Candidates for specialised Engineering Fellowship Scheme should send their applications alongwith requisite Postal Orders direct to the Institute to which they would like to seek admission in the M.E./M.Tech. Programme (addresses have been given above under Column V of the table).

(13) CANVASSING IN ANY FORM WILL MEAN DISQUALIFICATION.

(14) **Selection :** Selection will be on the basis of a test/interview.

(15) **Stipend & Salary :** During training, the trainees will be paid a consolidated stipend of Rs 2000/- per month. In addition, book allowance would be admissible They may be given suitable Hostel Accommodation during the period of Fellowship on payment of rent as per rules. On successful completion of the training, candidates would be placed in one of the Laboratories Establishments as Scientists 'B' in the scale of Rs 2200-75-2800-EB 100-4000 The approximate total emoluments (ATE) at the minimum of the scale vary from Rs 2726/- to Rs 3036 - per month depending upon the place of posting

(16) For instructional tours and summer training in the DRDO establishments, the Fellows will be entitled to TA DA as admissible to Central Government Group 'A' Officers drawing a basic pay in the scale of Rs 2200-75 2800 EB-100-4000

(17) During the operation of the Fellowship Scheme, the Fellows will be required to pass all tests examinations which are prescribed by the Institute Those who are not able to pass such tests examinations and do not successfully complete the training shall not be considered for appointment to the grade of Scientist 'B'.

(18) **Bond :** Candidates will be under contractual obligation to serve the Defence Research & Development Organisation for a period of three (3) years, after completion of training During training the candidates will not be permitted to apply/appear for any interview selection examination

(19) Promotion Prospects DRDO offers excellent opportunities for career advancement as Scientists Result-oriented and highly motivated scientists can look forward to promotion to the following grades Approximate total emoluments (ATE) at the minimum of the pay scale will depend upon the place of posting

Scientist 'C' Rs 3000-4500 (ATE Rs 3710 to Rs 4090)
Scientist 'D' Rs 3700-5000 (ATE Rs 4575 to Rs 5055)
Scientist 'E' Rs. 4500-5700 (ATE Rs 5475 to Rs 6055)
Scientist 'F' : Rs 5100-6300 (ATE Rs 6079 to Rs 6659)
Scientist 'G' : Rs. 5900-7300 (ATE Rs. 6951 to Rs. 7531)

Promotion in DRDO depends upon merit and performance and is not linked to availability of vacancies

PROFORMA APPLICATION

APPLICATION FOR FELLOWSHIP COURSE IN ———

1 Name in full (Shri Smt Km) (in block letters) Affix Passport size latest Photograph
2. Title of Fellowship
3 (a) Name of the Institute/University at which admission is being sought
(b) Name of the discipline of Engineering for which admission is sought
4 (a) Date of Birth (in Christian Era in Figures)
(b) Age as on 29 June 20 July 1988* (*As applicable)
5. Nationality
6. Marital Status
7. Father's/Husband's Name
8. (a) Address for correspondence (in block letters with pin code)
(b) Permanent address (in block letters with pin code)
9 Details of Postal Order (No. Date and Amount)
10. Nearest Railway Station
11. Whether belong to SC/ST (if yes, attach certificate)
12 Educational Qualifications In chronological order from X Standard (SSLC/HS/HSC) onwards

Sr No	Course Passed	University Institution/ Board	Year of Passing	Subject taken	Percentage of Marks

13 (a) Are you a Govt. servant Yes No
(b) If yes, whether in Central State Govt Union Territory Govt
14 Professional Training

Organisation	Period From	Period To	Details of Training

15 (a) Are you qualified at GATE 88
(b) If qualified, please give the percentile score
16 Employment Record :

Name & address of Employer	Period of service From	Period of service To	Designation of the post held	Scale of pay of each post	Detailed description of work*	Reason for leaving

* Separate sheet may be attached if necessary
17 Minimum joining time required :
18. Field of Special interest :
19. List of Papers Published ,
20 Are you under any contractual obligation to serve Central/State Govt PSU Autonomous Body ? If so, give details.
21 Details of relatives already employed in DRDO

Name of Relatives	Relationship	Lab Estt in which employed	Post Held

22 Any other information you may wish to add (Use separate sheet if necessary)
23 Declaration
I declare that the foregoing information is correct and complete to the best of my knowledge and belief and nothing has been concealed distorted. If at any time, I am found to have concealed/ distorted any material information, my appointment shall be liable to summary termination without notice/compensation. I will, if and when required, take up duty in the discharge of government assignments anywhere in India.

Place .
Date .

Signature of Candidate
davp 88/144

Cochin University of Science & Technology

COCHIN-682 022

VACANCY NOTIFICATION

SPECIAL RECRUITMENT FROM SC/ST COMMUNITIES

No. Ad A3/54/77

Applications in the prescribed form are invited from qualified candidates belonging to Scheduled Caste Scheduled Tribe Communities for appointment to the following posts included among the non-teaching service of the University.

CLASS II CATEGORY POSTS

1. **Systems Analyst** (Rs. 1300-2725)—1 post (Temporary but likely to become regular)

Qualifications & Experience : (1) I or II Class M Tech Degree in Computer Science. (2) Proficiency in Database development, Computer Graphics, System Software, Languages like PASCAL, 'C'.

2. **Technical Assistant Grade I** (Material Science/Solid State Physics) Rs. 1250-2500 (Temporary but likely to become regular)—1 post.

Qualifications & Experience : Master's degree in the concerned related subject with two year's laboratory experience

3. **Computer Programmer** (Rs. 1250-2500)—1 post.

Qualifications & Experience : (1) A University degree and a Diploma or Degree in Computer Science from a recognised University. (2) Sound knowledge of COBOL, 'C', and PASCAL (3) Familiarity with database and hands on experience with mini computers desirable.

4. **Statistical Officer** (Rs 1100-2100)—1 post.

Qualifications & Experience : M.Sc. in Statistics with experience training in Computer Programming.

5. **Welding Technologist** (Rs. 1050-2000)—1 post

Qualifications : **Essential** : B. Tech in Mechanical Engineering. **Desirable** : Knowledge of advanced welding technologies like Electro slag and Electro gas welding.

CLASS III CATEGORY POSTS

6. **Technical Assistant Grade II** (Rs. 975-1720)—1 post

Qualifications & Experience : Bachelor's Degree in Chemistry with a minimum of five year's Laboratory experience.

7. **Library Assistant Grade I** (Rs. 850-1600)—2 posts

Qualifications : A University degree and degree diploma in Library Science.

8. **Chemical Assistant** (Rs. 780-1320)—1 post

Qualifications & Experience : A Bachelor's degree in Chemistry.

9. **Technician** (Rs 780-1320)—1 post

Qualifications : ITI in Instrument Machanics with a pass in Apprenticeship Training Examination.

10. **Ammonia Print-cum-Photocopier Operator** (Rs. 740-1245)—1 post

Qualification & Experiennce : **Essential** : (1) Matriculate or equivalent. (2) Two years experience in the specific field **Desirable** : Experience in carrying out minor repairs on xerox machine.

11. **Tracer, Overseer Grade III** (Rs. 675-1125) 1 post each

Qualifications : (1) SSLC or equivalent and (2) Diploma in Civil Engineering or any other qualification equivalent thereto, as prescribed in Kerala Engineering Subordinate Service (General) Rules.

12. **L.D. Typist Stenographer** (Rs. 675-1125)—2 posts.

Qualification : (a) ***General*** : Pre University Pre-Degree pass certificate or pass in Part I English of the Intermediate examination. The afore-mentioned minimum general qualification will be relaxed in the case of those who have **any** one of the following qualifications:

(1) SSLC with 50% marks in English (2) SSLC and Typewriting High Speed English (KGTE/MGTE) (3) SSLC and Shorthand English Lower (KGTE/MGTE)

(b) **Technical** : (1) Higher Grade Examination in Typewriting English (KGTE/MGTE) or equivalent qualification (2) Lower Grade Examination in Typewriting Malayalam (KGTE)

13. ***Gardener*** (Rs 575-900)—1 post.

Qualifications & Experience : (1) Ability to read and write. The maximum qualification shall not exceed a pass in 9th Standard. Experience in gardening desirable.

1. Age not below 18 years and not above 40 years as on 1-1-1988. The age limit prescribed will not apply to employees already in the service of the Cochin University of Science & Technology.

2. Separate application should be submitted for each post applied for.

3. Prescribed application forms alongwith instruction sheets can be had free of cost from the Administrative Office, Cochin University of Science and Technology, Cochin 682 022 on a requisition made to the undersigned.

4. Application forms will be sent by post, if requested alongwith a self-addressed envelope bearing postal stamps worth Re. 1/-. Request for applications by post received after 23-6-1988 will not be entertained.

5. Completed applications along with true copies of documents to prove age, community and caste, qualification, experience etc, should reach the undersigned before 5.00 *p.m.* on or before **30-6-1988.**

6. Late and defective applications will be summarily rejected.

V. J. Pappoo
REGISTRAR

CLASSIFIED ADVERTISEMENTS

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

COCHIN - 682 022

No Ad A2-66-88 (C)

Requires

LECTURERS

(Scale of Pay Rs. 1300-2725)

Applications in the prescribed form are invited from qualified candidates for appointment to the following posts of Lecturers included among the teaching service of the University.

	Department/School	*No of Posts*	*Specialisation*
1	**Foreign Languages**	1	French
2	**Foreign Languages**	1	Russian
3	**Management Studies**	1	Bank Management
4	**Marine Sciences**	1	Microbiology (Marine)
5	**Marine Sciences**	1	Meteorology with experience in Computer Applications
6	**Management Studies**	1	Production Management Personnel Management
7	**Management Studies**	1	Business Administration

1 Age not more than 40 years as on 1-1-1988 Relaxation in upper age limit as in the Government of Kerala will be available for all the aforesaid posts The age limit prescribed will not be applicable to the teachers already in the service of the University

2 Appointments will be made in accordance with Section 7(2) of the Cochin University of Science and Technology Act, 1986 (Act 31 of 1986) and as per the rules framed by the Syndicate of the University

3 Prescribed application forms alongwith information sheets can be had on payment of Rs 5 - at the University Cash Counter Application forms will be sent by post, if requested along with a postal order worth Rs. 5/- drawn in favour of the Registrar, Cochin University of Science & Technology, payable at Cochin-682 022 Post Office, and a self-addressed envelope bearing postal stamp worth Rs. 3 -.

4 Separate application should be submitted for each post applied for.

5. Request for applications by post received after 23 June, 1988 will not be entertained.

6. Completed applications alongwith copies of documents to prove age, community, qualifications, experience etc, should reach the undersigned before 5 00 p m. on or before 30 June, 1988 Late and defective applications will be summarily rejected.

V J. Pappoo
REGISTRAR

MODEL INSTITUTE OF EDUCATION & RESEARCH

B C. ROAD, JAMMU

M I E.R A poineer Institution in J&K State dedicated to the promotion of Education, Research, Training and Social Welfare (Estd. 1936) invites applications within 30 days of this publication for Lecturers-Cum-Research Officers for the MIER College of Education.

Salary : Rs. 2200 to 4000 plus allowances (UGC Grade)

Qualifications M.A / M.Sc. with M Ed. and Ph D. with good academic record and teaching experience at B Ed M.Ed levels

Candidates attending interview shall do so at their own expenses. Higher start in pay passible for candidates possessing additional higher qualifications and administrative, research experience Applications complete in all respects with a copy of a recent photograph be addressed to the undersigned along with a crossed Indian postal order of Rs 20 - (non refundable) in the name of the Director, MIER

Prof Abdul Aziz
REGISTRAR

UNIVERSITY OF KERALA

Advt No PR. 1201/12/88

Dated 25th May, 1988

Notification

In partial modification of this office notification of even No. dated 26.4.1988 it is hereby notified that the post of Lecturer in the Department of Sanskrit is an Open Vacancy and not reserved for Muslim community. The last date for receipt of applications for the post is extended to 20th June 1988.

S.K. Rajagopal
REGISTRAR

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

COCHIN-682 022

VACANCY NOTIFICATION

Ad. A2/66/88

Applications in the prescribed form are invited from qualified candidates *belonging to Scheduled Caste/Scheduled Tribe Communities for appointment to the* following posts included among the teaching service of the University.

Department/School	Name of the Post	Specialisation	No. of Post
Computer Science	Professor in Computer Science	Nil	1
Law	Reader in Law	Jurisprudence	1
Management Studies	Reader in Management	Production Management/Operation Management/Quantitative Technique	1
Foreign Languages	Reader in English	Nil	1
Environmental Studies	Reader in Environmental Studies	Chemical Engineering/Environmental Engineering	1
Mathematics & Statistics	Reader in Statistics	Nil	1
Marine Sciences	Reader in Marine Sciences	Microbiology	1
Foreign Languages	Lecturer in German	Nil	1
Industrial Fisheries	Lecturer in Industrial Fisheries	Fishing Management	1
School of Management Studies	Lecturer in Management Studies	Management Studies	1
Applied Economics	Lecturer in Economics	Mathematical Economics and Statistics	1
Electronics	Lecturer in Electronics	Electronics	1
Applied Chemistry	Lecturer in Chemistry	Bio-chemistry	1
Mathematics & Statistics	Lecturer in Mathematics	Operational Research/Computer Science, History of Mathematics	1

1. **Scale of Pay**: *Professor*: Rs. 2450-3600
   Reader : Rs. 1950-2950
   Lecturer : Rs. 1300-2685
2. **Age** :
   Professor : Not more than 55 years as on 1-1-1988
   Reader : Not more than 50 years as on 1-1-1988
   Lecturer : Not more than 45 years as on 1-1-1988
3. The *age limit prescribed will not be* applicable to the teachers already in the service of the University.
4. *Prescribed application forms* alongwith information sheets can be had free of cost from the Administrative *Office, Cochin University of Science* & Technology, Cochin-682 022 on a requisition made to the undersigned.
5. Separate application should be submitted for each post applied for.
6. Application forms will be sent by post, if requested alongwith a self-addressed envelope bearing postal stamps worth *Rs. 3/-*. Request for applications by post received after 23 June, 1988 will not be entertained.
7. Completed applications alongwith copies of documents to prove age, community, qualifications, experience etc., should reach the undersigned before 5,00 p.m. on or before 30 June, 1988. Late and defective applications will be *summarily rejected.*

V.J. Pappoo
REGISTRAR

VECTOR CONTROL RESEARCH CENTRE

(Indian Council of Medical Research)
PONDICHERRY 605 006

Applications are invited for THREE Junior Research Fellowships to work on several aspect of microbial pathogens of arthroped vectors of diseases at the Vector Control Research Centre. Candidates should have passed M.Sc. in Microbiology / Biochemistry Biotechnology and should send their complete biodata so as to reach the Director, Vector Control Research Centre, Pondicherry 605 006 on or before **30th June 1988**. Those who had responded to the earlier advertisement need not apply again. Candidates selected can register for their Ph D. with Central University, Pondicherry and will be paid a monthly stipend of Rs. 1800/- for a period of three years.

SANT DARBARA SINGH COLLEGE OF EDUCATION FOR WOMEN

LOPON. (Farid Kot) (Pb)
Via Badhni Kalan

"Wanted a lady Principal for S.D.S. College of Edu for Women Lopon (Farid Kot), Punjab, on *regular basis.* **Qualifications** : 1. Master's Degree in Education as also a Master's Degree in another subject. (for those *having* M A. Education and M.A. in another subject, B Ed. shall also be an essential requirement). 2. 10 *Years' teaching experience* as an approved Lecturer in a College of Education or a Department of Education *of a University. Provided that the teaching experience may be relaxed to* 5 years in case of a person possessing Ph.D. degree in Education and to 8 years in case of a person possessing an M.Phil. degree in Education. Apply to the *Secretary of the College* with a copy to the Associate Dean, College Development Council, Panjab University, Chandigarh, within 15 days of publication of this want."

SECRETARY

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

COCHIN - 682 022

VACANCY NOTIFICATION

No. Ad. A2/66/88 (A)

Applications in the prescribed form are invited from qualified candidates for appointment to the following posts included among the teaching service of the University :

Department/School	Name of the post	Specialisation	No. of post
Physics	Professor in Physics	Industrial Physics	1
Marine Sciences	Professor in Marine Sciences (Temporary, but likely to become permanent)	Physical Oceanography	1
Applied Economics	Reader in Applied Economics	Mathematical Economics	1
School of Management Studies	Reader in Management Studies	Commerce	1
Law	Reader in Law	Criminal Law	1
Computer Science	Reader in Computer Science	Computer Science	1
School of Management Studies	Reader in Management-Studies	Marketing Management	1
Electronics	Reader in Electronics	Electronics	1
Computer Science	Readers in Computer Science	Computer Science	2
Physics	Reader in Physics	Physics	1
Electronics	Reader in Electronics	Electronics	1
Polymer Science & Rubber Technology	Reader in Polymer Science & Rubber Technology	Rubber Technology	1
School of Marine Sciences	Reader in Marine Sciences	Meteorology with specialisation in modelling	1

1. Scale Pay : Professor : Rs. 2450-3600
Reader : Rs. 1950-2950
2. Age : Professor : Not more than 50 years as on 1-1-1988
: Reader : Not more than 45 years as on 1-1-1988

3. **Relaxation** in upper age limit as in the Government of Kerala will be available for all the aforesaid posts. The age limit prescribed will not be applicable to the teachers already in the service of the University.

4. *Appointments* will be made *in* accordance with Section 7(2) of the Cochin University of Science and Technology Act, 1986 (Act 31 of 1986) and as per the rules framed by the Syndicate of the University.

5. Prescribed application forms alongwith information sheets can be had on payment of Rs 5/- at the University Cash Counter. Application forms will be sent by post, *if requested* along with a postal order worth Rs. 5/- drawn in favour of the Registrar, *Cochin University* of Science & Technology, payable at Cochin-682 022 Post Office, and a self-addressed envelope bearing postal stamp worth Rs. 3/-.

6. Separate application should be submitted for each post applied for,

7. The persons who have already applied for the post of Readers in Computer Science and Electronics in response *to the notifications dated 20-6-87 and* 23-6-87 need not apply again.

8. Request for applications by post received after 23 June, 1988 will not be entertained.

9. Completed applications along with copies of documents to prove age, community, qualifications, experience etc., *should reach the undersigned before* 5.00 p.m. on or before 30 June, 1988. Late and defective applications will be summarily rejected.

V.J. Pappoo
REGISTRAR

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

COCHIN - 682 022

VACANCY NOTIFICATION

No. Ad. A3/12/87

Applications in the prescribed form are invited from qualified candidates for appointment to the following posts coming under the non-teaching service of the University.

CLASS I CATEGORY POST

Maintenance Engineer (Rs. 1950-2950)
1 Post

Qualification and Experience : (1) B. Sc. (Engg.) B.E./B.Tech in Electronics & Communication Systems or equivalent. (2) Five Years experience in repair/ maintenance of sophisticated electronic equipment. **Desirable** : Experience with Microwave equipment, Radar/Microprocessor and Computer Systems. Persons from reputed electronic manufacturing firms or ex-servicemen will be preferred.

CLASS III CATEGORY POSTS

1. **Technical Assistant Grade II** (Rs. 975-1720)—2 Posts

Qualifications & Experience : (1) B.Sc. Engg./B.Tech./Three Year Diploma in Electronics and Communication, Instrumentation Electrical Engineering. (2) Two years' experience (for graduates) & four years experience (for diploma holders) in repair and maintenance of consumer items like TV, VCR, Radio, Tape Recorder, Electrical appliances etc. **Desirable :** Acquaintance with modern electronic consumer *items like* Typewriters, Word Processors, Micro-processor controlled machines.

2. **Library Assistant Grade I** (Rs. 850-1600)—2 posts

Qualifications : A University degree and degree/diploma in Library Science.

3. **Instrument Technician** (Rs. 780-1320)—1 Post

Qualifications & Experience: (1) Three Year Diploma in instrumentation awarded by a University or a Directorate of Technical Education. (2) A minimum of two years experience in an educational research R & D Organisation belonging to the Public Sector in the repair and maintenance of scientific instruments including electronic instruments.

4. **Overseer Grade-III** (Rs. 780-1320) — 2 Posts

Qualifications : (1) SSLC or equivalent and (2) Diploma in Civil Engineering or any qualification equivalent thereto as prescribed in the Kerala Engineering Subordinate Service (General) Rules.

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*Appointments will be subject to the rules for communal reservation and rotation as provided for in Section 7(2) of the Cochin University of Science and Technology Act, 1986 (31 of 1986), as applied to posts collectively comprising each category.

*Age limit prescribed for the aforesaid posts will be not below 18 years and not above 35 years as on 1-1-1988. Relaxation in upper age limit to backward classes, Scheduled Caste-Scheduled Tribe, Ex-servicemen, physically handicapped etc., as in the Government of Kerala *will be available for the aforesaid* posts. The age limit prescribed will not apply to employees already in the service of the Cochin University of Science and Technology.

*Application forms can be had on payment of Rs. 2/- at the University Cash Counter. *Application forms will* be sent by post, if requested alongwith a Postal Order for Rs. 2/- drawn in favour of the Registrar, Cochin University of Science and Technology, Cochin-682 022 payable at Cochin-682 022 Post Office and a self-addressed envelope bearing postal *stamp* worth Re. 1/- Requests for application by post received after 23-8-1988 will not be entertained. Completed applications alongwith documents to prove age, date of birth, community, qualifications, experience etc., should reach the undersigned befor 5.00 p.m. on or before 30-6-1988 Late and defective applications wrll be summarily rejected.

V.J. Pappoo
REGISTRAR

INSTITUTE OF MICROBIAL TECHNOLOGY

1389, SECTOR 33-C, CHANDIGARH

(Council of Scientific and Industrial Research)

Advertisement No. 5/88

1. Applications in the prescribed form are invited for the following posts:

1 **Scientist EI EII** (Biochemical Engineer) : Two
Gr. IV(3) Rs. 3700 125-4700-150-5000
Gr. IV(4) Rs. 4500-150-5700

Educational qualifications and experience. Essential : A Ph.D. Degree in Biochemical Engineering/Chemical Engineering with 10 years postdoctoral research experience in a reputed institution or industrial organisation or experi*ence of handling industrial operation/* process in a biochemical fermentation process based industry. Alternatively, a first class M Tech degree in biochemical Engineering Chemical Engineering with 12 years research industrial experience in a fermentation industry or a *biochemical biological process* based industry. Exceptionally qualified candidates may be considered for placement in Gr. IV (4) by the Selection Committee. Candidates otherwise suitable but with lesser experience may be considered at lower grade with the consent of the candidate

Desirable : Publications in reputed journals and or relevant patents. Good knowledge of biochemistry of metabolism microbial physiology microbial processes. Knowledge of mathematical modelling application of computers in *fermentation and other processes* will be an advantage.

Job description : This is a senior level position in which the incumbent is expected to lead a research and develop*ment team to design new/improved pro*cesses upto pilot plant level. The person should be capable of interacting with industries so as to encourage industrial participation in the developmental programme of the Institute.

Age : Preferably below 40 years.

2. *Scientist C*
Gr. IV (2) Rs. 3000-100-3500-125-4500
No. of posts : One

Educational qualifications and experience. Essential : A Ph D. Degree in any branch of modern biology with 2 years experience or in chemistry with at least 6 years research experience (after Ist class M.Sc.) in one or more of the following areas as evidenced by an excellent record of published work. (i) carbohydrate and peptide chemistry (ii) recombinant DNA *technology*, (iii) *targeted* drug delivery, (iv) Enzymology and microbial/molecular genetics.

Desirable : Two years postdoctoral research experience in a reputed institution or industrial research and development organisation. Consistent good academic record and a broad based knowledge of biological sciences.

Job description : The incumbent is expected to be involved in the planning and execution of research programme under the overall supervision of a senior investigator or independently and to carry out related activities assigned to the scientists from time to time

Age : Preferably below 35 years.

3. ***Scientist B***

Group IV (1) Rs. 2200-75-2800-EB-100-4000

No. of posts Three : Unreserved 1 post
(Reserved for SC-1 post
Reserved for ST-1 post
but General Category may apply)

Educational qualifications and experience :

A Ph D. Degree in *microbiology*, biochemistry, cell biology, molecular biology, immunology or in any other branch of biology or a first class M Sc. Degree

Job description The selected person will work in one of the on-going projects which is considered suited to his her qualification and research experience The incumbent is expected to provide scientific assistance in execution of research projects of the institute and to carry out related activities that may be assigned to him her from time to time.

Age : Preferably below 30 years.

4. **Scientist B** (Veterinary science) : One

Group IV (1) Rs 2200-75-2800-EB-100-4000.

Educational qualifications and experience

Essential : *Ph.D./Ist* class M.V Sc. Degree in Veterinary Science.

Desirable : 2-3 years experience in *animal handling, care and breeding.*

Job description : The incumbent will be responsible for maintenance of a *modern animal house* facility for biomedical research.

Age : Preferably below 30 years.

5 **Scientist B (Horticulture) (Gr IV)—One**
(Rs 2200-75-2800-EB-100-4000)

Essential Ph D /Ist Class M Sc in Agriculture/Horticulture.

Desirable 2 to 3 years experience in care and management of gardens and green houses etc.

Job description The incumbent will be responsible for landscaping plantation beautification and maintenance of the campus grounds

Age Preferably below 30 years

6 **Junior Technical Assistant**
(Animal House Facility) One
Grade VIII—Group III (I)
(Rs 1400-40-1800-EB-50-2300)

Educational Qualification & Experience

Essential

A B Sc Degree in biological science

Desirable

2 years working experience in animal handling, care and breeding

Job description

The incumbent will be involved in maintenance of a modern animal house and other duty assigned to him her May be required to do shift duty

Age Preferably below 28 years

II **Microbial Type Culture Collection & Gene Bank (MTCC)**

Institute of Microbial Technology perates MTCC as a national facility jointly supported by CSIR and Deptt of Biotechnology This well equipped modern laboratory is devoted to serve the scientific community in academic institutions research organisations and in industries Principal objective of MTCC is maintenance preservation and supply of authentic micro-organism and providing other services expected from a reputed culture collection

7 **Scientist C** No of posts Two
Group IV (2) (Rs 3000 100-3500-125-4500)

Educational qualifications and experience

Essential A Ph D Degree in any branch of biological sciences and consistent good academic record At least two years post-doctoral research experience in a reputed institution An excellent record of publication in reputed journals Work experience in identification/taxonomy preservation of micro-organisms such as actinomycetes bacteria fungi/yeasts. Commitment to excellent research in a field relevant to a culture collection

Desirable Research experience pertaining to taxonomy/environmental microbiology/ecology / genetics/molecular biology Familiarity with modern and rapid methods of and approaches to microbial Indentification and taxonomy

Job description The incumbent would be assigned responsibility in various aspects related to a major microbial culture collection including identification, computerization maintenance preservation and distribution In addition should be involved in research either independently or as a part of an ongoing research group

Age Preferably below 35 years

Scientist B No *of post*—2
Group IV (1) Rs 2200 75-2800-EB-100-4000.

Educational qualification & Experience

Essential A Ph D Degree in mycology or microbiology or in any branch of biological sciences Alternatively, Ist Class M Sc in any fields mentioned above

Desirable Experience in taxonomy identification of fungi and bacteria and familiarity with modern techniques of their maintenance and preservation Specialised knowledge of any group of fungi bacteria A consistent good academic record and commitment to excellent research

Job description The incumbent would be associated with a senior scientist and would be involved in identification maintenance preservation and distribution of micro-organisms He she will be assigned responsibility in an ongoing research project

Age Preferably below 30 years

Applicable to all Posts

Number of vacancies advertised may vary at the time of selection In the event of a candidate being exceptionally good he she may be offered higher grade salary Candidate(s) may also be considered with his/her consent for a post lower than applied for In case of an excellent candidate requirement can be *relaxed by 3 years. 5 years relaxation* in age for SC ST candidates is also admissible

Total emoluments at minimum of the scale payable at Chandigarh at present

Scientist E II	Rs. 5375 00
Scientist E I	Rs 4575 00
Scientist C	Rs 3710 00
Scientist B	Rs 2726 00
Junior Technical Assistant	Rs 1792 00

General Conditions

Persons working in Govt. Deptt / *Undertaking* Autonomous bodies should send their application through proper channel Application *form can be* had free of cost from the Administrative Officer. Institute of Microbial Technology, House No 244 Sector 35-A Chandigarh upto **20 7 88** Number of advertisement name of the post applied for and full address in block letters must be indicated at the top of the request which should be sent together with a self addressed and stamped for Rs 1 40 envelope of 22 cm x 10 cm size for obtaining the application form Complete application in the prescribed form together with non-refundable application fee of Rs 8 (No fee in case of SC/ST candidate) in the form of crossed Indian Postal Order drawn in favour of the Director Institute of Microbial Technology Chandigarh alongwith attested copies of the testimonials/certificates should reach the Director Institute of *Microbial Technology House No. 1389*, Sector 33-C Chandigarh, latest by **29 7 88**

Canvassing in any form and or bringing in any influence *political or otherwise* will be treated as a disqualification for the post

Since it is not possible to call all the candidates for interview/test the applications will be short listed for the purpose and the decision of a duly constituted Screening Committee of the Institute will be final

Interim enquiries will not be attended to

UNIVERSITY OF DELHI

Ref Advertisement No Estab IV 113 88 Dated 16 5 88 for Teaching and other Posts

CORRIGENDUM

She Special Desirable Qualification for the following posts may be read as noted against each

Faculty of Management Studies
Special/Desirable Qualifications

***Professor** One Accounting Finance Computer MIS Public Policy Rural Development*

***Reader** Three Personnel Management and Industrial Relations Organization Development Marketing Management/ *Organization Behaviour Accounting and Finance Government and Business/ Operations Research Production Management*

Other details above these posts including essential qualifications remain unchanged

The last date for receipt of applications for **these posts only** has been extended upto **27th June, 1988**

J C. Kochhar
REGISTRAR

MANIPUR UNIVERSITY

CANCHIPUR : IMPHAL

Advertisement No. 7/88 **Dated the 25th May, 1988**

Applications are invited for the following posts :

Post	Department	No. of Post	Specialization
PROFESSOR	1. POLITICAL SCIENCE	1	Research Methodology and Social & Political Thought of Modern India
	2. MANIPURI LANGUAGE & LITERATURE	1 (Temporary, initially for 2 years against a Chair)	Manipuri Language, Literature & Culture
ASSOCIATE PROFESSOR	1. LIFE SCIENCES	1 1 (Temporary, appointment to be for 2 to 3 years)	Genetics Ecology
	2. MANIPURI LANGUAGE & LITERATURE	1	Folklore
	3. ENGLISH LANGUAGE & LITERATURE	1	English Language Teaching (Method)
LIBRARIAN	...	1	

Scales of Pay

PROFESSOR	Rs. 4500-150-5700-200-7300/-
ASSOCIATE PROFESSOR	Rs. 3700-125-4700-150-5700/-
LIBRARIAN	Rs. 1500-60-1800-100-2000-125/2-2500/- (Pre-revised)

Essential Qualifications

Professor : An eminent scholar with published work of high quality actively engaged in research in the relevant field. About ten years experience of teaching and/or research. Experience of guiding research at doctorate level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge in the relevant field.

N.B. : The post of Professor in Manipuri Language & Literature is against a Chair. The appointment will be initially for two years and the Professor will be required to make a critical review of Grierson's works on Indian Language during the first two years.

Associate Professor : (a) Good academic record with a doctorate degree or equivalent published work in the relevant field. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

(b) 5 years experience of teaching and/or research provided that at least three of these years were as Assistant Professor/Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

Librarian : Essential : (a) First or second class M. Lib. Sc.

OR

M.A./M.Sc./M.Com. plus a First or Second class B.Lib.Sc. or Diploma in Library Science.

(b) At least ten years experience as Librarian or in a responsible professional capacity in a University Library.

(c) Ph.D. Degree on equivalent research work in the field relevant to the profession.

Desirable: Training in Computerization Information Technology/Specialized areas.

Candidates invited for interview will be given Ist Class railway fare as T.A. from the place of origin and back or the actual expenses on fare, whichever is less.

How to Apply : Applications on plain paper (in duplicate) with attested copies of certificates showing candidate's name, father's name, academic and professional attainment, teaching professional and research experience field of specialization, publications (to be enclosed with reprints), Seminars Conferences attended, details of visit to foreign countries and assessment reports from at least two persons well acquainted with the candidate's professional work should reach the Registrar, Manipur University, Imphal-795 003 on or before **25th June, 1988.**

Applications received late or incomplete in any respect may not be entertained. Persons already in service must apply through their employers so as to reach this office on or before the last date fixed. No candidate will be considered for appointment unless he/she produces a 'No Objection Certificate' from his/her employer at the time of interview.

Retired persons who have not attained the age of 62 years may also apply for appointment on contract basis. It will be open to the University to consider the names of suitable candidates who may not have applied.

In case a candidate is found not suitable for the post applied for and he is found suitable for a lower position, he may be considered for the latter on his request.

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THE UNIVERSITY OF JODHPUR
ESTABLISHMENT SECTION

No : JDR/U/ESTT/7469

Dated : May 28, 1988

Advertisement No 36/88 89

APPOINTMENTS

Applications are invited on the prescribed form for the following posts o as to reach the office of the underigned latest by 25th June, 1988 The pplication form can be obtained from his office on payment of Rs 10 - (Ten) nly through Indian Postal Order yable to the Registrar University of Jodhpur, Jodhpur alongwith a self-addressed envelope of 24 x 11 cms size bearing postal stamps of Rs 5·90 n p Application fee for SC ST candidates will be Rs 2 50

1 **Professor** (one post)

Rs 1500-60-1800-100-2000-125 2 2500 (unrevised) Electronics and Communication Engineering for Master of Computer Application Programme

Qualification An eminent scholar with published work of high quality actively engaged in research Ten years experience of teaching and or research Experience of guiding research at doctoral level

OR

An outstanding Engineer Technologist with established reputation who has made significant contribution to knowledge

2 **Associate Professors (Readers)** (two posts)

Rs 1200 50-1300 60-1900 (unrevised)

(a) Electronics and Communication Engineering for Master of Computer Application Programme (One)

(b) B Sc Diploma course in Consumers Electronics and T V Technology (One)

Qualifications Good academic record with a Doctor's degree in a relevant field About five years experience of teaching and or research and development Provided further that candidates not possessing Ph D may be considered if they have to their credit equivalent research published work or design development work of a high order in the institution or in an industry

OR

In the case of persons to be recruited from industry or professional fields candidate should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development

The interviews shall be held as per under noted programme No separate interview letters shall be issued

S No	Name of Post	Date & Time of Interview
1	*Professor*	*2nd July, 1988 at 10 00 a m*
2.	Assoct, Professors	2nd July, 1988 at 3 00 p m

3 **Programmer Assistant for Master of Computer Applications Programmes** (one post)

Rs 1720-40 2000-50-2300-60-2600-75-3050-100-3350

Qualifications Master s Degree in Computer Science Computer Engineering Master in Computer Applications with two years experience.

OR

Degree in Engineering with one years' experience in Computer Applications

OR

Degree with Post graduate Diploma in Computer Science Technology applications and two years experience in Computer Science Computer Engineering

OR

Diploma in Engineering with post diploma in Computer Science/ Technology applications and two years' experience in Computer Science Computer Engineering.

4 **Senior Technical Assistant for Master of Computer Application Programme** (one post)

Rs 1550 30-1640 40 2000 50-2300 60-2600-75-3050-100-3250

Qualifications Post-graduate Diploma in Computer Science Computer Engineering Computer Applications with two years experience

OR

Master Computer Applications

5 **PCB Supervisor** (B Sc Diploma Course in Consumers Electronics and T V Technology) (one post)

Rs 1490-30-1640-40 2000-50 2300-60-2600-75 050

Qualifications Diploma in Electronics Electrical with two years experience in P C B fabrication

OR

I T I. Certificate in Electronics/ Electrical with 10 years experience in P.C B fabrication

6 **Technical Assistant for Master of Computer Application Programme** (one post)

Rs 1400-30-1640 40-2000-50-2300-60-2600-75 2825

Qualifications Graduate in Arts or Science with Mathematics Statistics/ Computer Science options or Graduate in Commerce or Management One years experience of Training/ Working in Computer Applications.

OR

Diploma in Electronics Electrical Engineering with post-graduate diploma in Computer Applications

OR

Diploma in Electronics with at least one year's experience in Computer Applications

OR

Graduate in any branch of Engineering with exposure to Computer Applications

The date and time for interview for the posts at Sr No 3, 4 5 & 6 shall be intimated separately to the applicants

Note .

1 Dearness Allowance, House Rent Allowance, City Compensatory Allowance etc and PF will be payable as per University rules

2 The University reserves the right *to* increase or decrease the number of posts The University also reserves the right not to fill the posts if *deemed necessary*

3 Applications received after prescribed date will not be considered at all

4 Candidate should affix passport size photo (latest) on the *application form*

5 The University may call for interview only limited number of candidates for the posts at Sr No 3 4 5, 6 No TA and DA will be paid to candidates appearing for interview

6 16% and 12% posts are reserved for SC and ST candidates respectively If no suitable SC ST candidates are available these posts will be considered as general

HKL Khattar
REGISTRAR

UNIVERSITY OF MADRAS

UNIVERSITY BUILDINGS
CHEPAUK, MADRAS-5

NOTIFICATION

Applications are invited for admission to the following **Postgraduate Courses in the University Departments** for the academic year 1998-89 :

I. M.A. Degree

Branches

*I-A History
II-D Public Management
III-C Econometrics
*III-D Economics (Indian Economics)
V-B Indian Philosophy
V-C Saiva Siddhanta
VI-E Applied Psychology and Psychological Services
VII English, Urdu, Persian, Hindi, French, Kannada, Malayalam, Telugu (Special)
VII-A Tamil Literature and Tamil Culture Sanskrit
VII-B Tamil (Special)
VIII Indian Music
IX Ancient History and Archaeology
XIII Sociology
XIV Anthropology
XVI Defence Studies
XVII Andragogy
* MA Work Education
MA Communication
* MA Criminology
MA Jainology
MA Vaishnavism

II. M.Sc. Degree

Branches

I-A Mathematics
II Statistics
III-A Biophysics
*III-C Physics (Specialisation : Theoretical Physics, Nuclear Physics)
*IV-B Analytical Chemistry
IV-C Physical Chemistry
IV-D Organic Chemistry
IV-E Inorganic Chemistry
IV-F Polymer Chemistry
IV-G Environmental Chemistry
VII-A Applied Geology
VII-C Geology
VIII-A Applied Geography
VIII-B Cartography
X Biochemistry

M.Sc. Branches (conducted at IBMS, Taramani).

M.Sc. Biochemistry
M.Sc. Microbiology (Faculty of Medicine-3 Years)
M.Sc. Environmental Toxicology
M.Sc. Bio-Medical Genetics

III. *M.Com. (Business Systems)
IV. Master of Library and Information Science (MLIS) (One year Course)
V. ML (International Law and Constitutional Law)

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*Conducted on an interdisciplinary basis

Prospectus and application forms can be had from the Registrar, University of Madras-600 005 from **30th May, 1988**, on requisition, with a Demand Draft for Rs. 30/- drawn in favour of the Registrar, University of Madras (together with a self-addressed stamped envelope of the size 28 x 13 cms for the value of Rs. 1-80 (in the case of postal requisitions). **Postal Orders and Money Orders** are not accepted. The last date for *receipt of filled in applications will be* **ten days** *from the date of publication of* results of qualifying degree examinations of this University. **Filled up applications should be sent directly to the Head of the University Department concerned and not to the Registrar, University of Madras before the expiry of the prescribed last date.**

The University reserves the right to start or suspend the conduct of any of the above courses, if the circumstances so warrant.

Major Dr P. Kuttiappan
REGISTRAR

ADMISSION NOTICE

BHOPAL UNIVERSITY
BHOPAL

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS
(1988-89)

Applications are invited for admission to Post B.Sc. Diploma in Computer Science and Applications. Admission to this course is based on (i) academic record, (ii) written test, and (iii) interview. The aim of the test is to find out individual's logical, mathematical and analytical ability. Only those candidates who qualify the written test will be called for the interview. In all cases, the decision of the admission committee will be final and binding on the candidates.

The duration of the course will be one academic year, comprising of two semesters and a project work according to UGC/DOE guidelines.

Eligibility

(A) Minimum 60% marks (55% for SC/ST) in B.Sc./B.E./M.Sc./M.Com. M.Stat./ M.A. (Economics) M.B.A.

OR

(B) Minimum 60% marks (55% for SC/ST) in B.A./B.Com. with at least one of the following major subjects:

(i) Mathematics, (ii) Statistics, (iii) Economics, (iv) Commerce.

The Schedule Caste/Tribe will be given a relaxation of 5% on the total of the above three criteria.

Candidates, who have appeared in the final year of a Bachelor's/Master's degree examination may also apply. However, they must produce evidence of having passed the Bachelor's/Master's degree with first class marks in aggregate by July 28, 1988.

If at any stage, it is found that a candidate does not satisfy the eligibility condition or the information furnished in the application is incorrect or his progress is not satisfactory, the University has all rights to cancel his/her admisson.

Prescribed application forms can be obtained from the office of the Head of the Department of Computer Science, Bhopal University, Bhopal-26 by sending a written requisition accompanied by a crossed I.P.O. of Rs 8/- payable to the Registrar, Bhopal University and a self-addressed envelope of 23 cm x 10 cm affixed with a postal stamp of Re. 1/-. Completed application forms alongwith a crossed I.P.O. of Rs 30/- (Rs. 10/- for SC/ST) payable to the Registrar, Bhopal University must reach to the Head of the Department latest by **20th July, 1988.** Candidates belonging to SC/ST must attach a certificate from the competent authority. The candidates in employment must enclose 'No Objection Certificate' from their employers.

DATE OF ENTRANCE TEST : **31st July, 1988 (Sunday) at 11.30 A.M.**

VENUE : BHOPAL UNIVERSITY CAMPUS

REGISTRAR

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